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LEISURE.

THE most fallacious ideas prevail respecting leisure. People are always saying to themselves, "I would do this, and I would do that, if I had leisure." Now, there is no condition in which the chance of doing any good is *less* than in the condition of leisure. The man fully employed *may* be able to gratify his good dispositions by improving himself or his neighbours, or serving the public in some useful way; but the man who has all his time to dispose of as he pleases, has but a poor chance, indeed, of doing so. To do increases the capacity of doing; and it is far less difficult for a man who is in a habitual course of exertion to exert himself a little more for an extra purpose, than for the man who does little or nothing to put himself into motion for the same end. This is owing to a principle of our moral nature, which is called the *vis inertiæ*, literally, the strength of inactivity, but which I will explain at once to unlearned persons by reminding them, that to set a common child's hoop a-going in the first place requires a smarter stroke than to keep it in motion afterwards. There is a reluctance in all things to be set a-going; but when that is got over, then every thing goes sweetly enough. Just so it is with the idle man. In losing the *habit*, he loses the *power* of doing. But a man who is busy about some regular employment for a proper length of time every day, can very easily do something else during the remaining hours: indeed, the recreation of the weary man is apt to be busier than the perpetual leisure of the idle. As he walks through the world, his hands hang unmuffled and ready by his side, and he can sometimes do more by a single touch in passing, than a vacant man is likely to do in a twelvemonth.

All this is exemplified fully in the actual practice of life. Who, I would ask, compose the class who perform most of the business of public charity? It is not those who are highly endowed with wealth and leisure. It is not in general those whom wealth has placed at ease, but the class of well employed traders and manufacturers, who, to appearance, are entirely engrossed by their own concerns. These men will snatch an occasional hour from their well-employed lives—perhaps an hour that ought to be devoted to relaxation—and do you more real work in that time than an idle man would accomplish in the half of his yaw-yaw existence. What is curious, if you place the busy trader on the shelf, as no longer requiring to work for his subsistence, he immediately loses the power of doing these little superfluous acts of goodness. In getting out of the way of all exertion, he becomes unable to do any thing, even when he wishes it. On the same principle, men never give a job to a lawyer or any body else, who is not pretty well occupied. And this is from no irrational homage to the name of the man, as is sometimes thought: it is because the man who does much is most likely to do more, and most likely to do it well.

Let no man, then, cry for leisure in order to do any thing. Let him rather pray that he may never have leisure. If he really wishes to do any good thing, he will always find time for it, by properly arranging his other employments. The person who thus addresses the public has acquired the power of doing so, such as it is, not by having had a great deal of time at his own disposal, but solely by ravishing the inglorious hours which the most of men spend in unprofitable and *unenjoyed* pleasures, and employing them in the cultivation of his mind. There is an anecdote told of a French author of distinction, who, by regularly employing, in a few jottings, the five minutes which his wife caused him to wait every day while she dressed for dinner, at last formed a book; certainly not the least meritorious of his works. Hazlitt also remarks, that many men walk as much idly upon Pall Mall in a few years, as would carry them round the globe. In fact, it may be said that to ask for leisure or time to do any ordinary thing, is equivalent to a confession that we are indifferent about doing it.

It is very fair that the busy man should be at ease at last. It is often the object for which he works. Neither can it be allowed that there is any absolute claim upon the wealthy to exert themselves for the good of the community. Wealth must be enjoyed as the possessor pleases, or it is no longer wealth, and one of the objects of industry is taken away. But it would be of vast importance—both to the wealthy idle themselves and to the community—if their tastes could oftener be directed to some beneficial employment within the range of their abilities and influence. It is a shame to those who are entirely at their own disposal, that almost all the general good that is done in the world is done by those who are already overworked. It might rather be expected that the affluent, who have no particular business of their own to attend to, should devote themselves to the general good. This is the more particularly to be expected when we observe the worse than trifles upon which idle opulence generally employs itself. If actual vice be avoided, the most contemptible frivolities and paltry amusements are sought after, for the purpose of—disgraceful word!—*killing time*. Sometimes we find the universal necessity of doing something, taking a good direction, or one at least rather on goodness' side. The female part of the affluent world are often found to be actively benevolent; and nothing can be more laudable. But the ells of idle humanity, that every day walk the street in vain, are beyond all mensuration. Now, I am convinced that if these leisurely persons only once fell into the way of employing themselves for some good end, they would find themselves far more comfortable than they are at present. They would suddenly feel the inspiration of a worthy purpose of existence. They would feel the self-importance of active exertion—the majesty of industry; that lofty feeling which even the hard-working housewife feels in increased proportion amidst the sloperies of a washing Saturday, and which gives to the early riser his right to taunt and look down upon all the recumbent part of mankind. The *gentlemen* must think of it. They must up and be doing. It is, I repeat, a disgrace to them, in this universally busy scene, to let all the laurels of charity and kindness be carried away by those who have enough ado to obtain their own subsistence.

OXFORD.

"Unfaded in glory, unfailing in years,
The mother of Churchmen and Tories appears."

IT is almost impossible for an untravelled Scotsman, even with the aid of Mr Ackerman's splendid publication, to conceive a distinct idea of Oxford. It is a kind of VENICE OF THE LAND, sitting upon the green and leafy meadows of central England, like that ancient capital upon the blue waters of the Adriatic; while, clear into the summer air, rise its numerous fanes and towers, with one immense dome presiding like a sovereign in the centre. Around it the level waters of the Isis and the Charwell press slowly on through masses of verdure and foliage, with a hundred merry skiffs gliding over their surface. Enter the city in any direction, and you immediately find yourself under the majestic shadow of some vast palace of learning, which oppresses you at once with the sense of its antiquity, and its overpowering dignity.

In Scotland, an *university* is one plain quadrangular house, generally placed in some crowded part of a commercial town. In England, an university (we are thinking of Oxford) consists of some four-and-twenty splendid buildings, few of them much less elegant, and many of them more so, than the Palace of Holyroodhouse or Heriot's Hospital at Edinburgh, and these are scattered throughout a small beautiful city, which is interspersed with other public structures of an equally magnificent nature. In Scotland, an university is chiefly a mere school for the completion of an ordinary classical education, or the instruction of young men in the duties of a very simple church establishment. In England, it is a fortress of literature, garrisoned by hundreds of learned personages, who batten in it most of their lives, like a set of well-fed monks, upon a simple showing that they possess a certain degree of literary accomplishment. While the Scottish establishment is a matter of bare utility of the present day, like a shop or manufactory, the English university seizes the imagination as a thing invested with much of the trappings of an ancient system of worship, redolent of the literary glories of a thousand past years, and full of all kinds of obsolete fashions and customs, which have the merit of being totally useless. In fact, there is all the difference between the two institutions which there is between an honest Scotch parish kirk and the graces of St Peter's or St Paul's.

The colleges in Oxford are generally built of a pale chalky stone, and, though there are many older buildings, the most of them show that elegant mixture of the Gothic and Grecian styles of architecture, which obtained in the reigns of Elizabeth and James I., and is now fast reviving in our country mansions. In almost every case they form a square, the front of which abuts upon some street or lane. The inner court of Christchurch measures 264 by 261 feet, and has a lake in the centre! But all the rest are smaller. Each of these communities is, to a certain extent, independent in itself, and is under the control of its own set of officers. The students, most of whom bear the designation of *commoners*, reside in apartments which they hire for themselves, and of which each purchases the furniture from his predecessor in occupancy. A hall, in which all dine together, generally occupies one side of the square. A chapel, in which they are compelled to attend prayers every day, often occupies another side, or is sometimes a detached and more magnificent building. Besides the officers, who have separate apartments, there are generally a certain number of learned inmates called *fellows*, who, having duly qualified themselves by learning, are supported in a style of gentlemanly ease, with hardly any hardship in their situation except an inability to marry, till they are provided for with a church living, of which every college has a certain number in its gift; after which they may marry as they please. For every kind of person connected with the university, there is a particular sort of gown, and also a skull-cap, with a square top more or less decorated. The students, or, as they call themselves the *men*, are all obliged, under penalties, to wear their *academicals* when they appear abroad. They are in general desirous of escaping this regulation, especially when they walk into the country; but, when caught by any of the proctors, even so much as *sporting beaver*, that is, wearing a common hat (for they have a cant name for almost every thing), they are sure to be put to some extra tasks. Dr Johnson was so devoted an adherent to all the practices of the university, that, whenever he visited it, even late in life, he resumed his academicals. The common undress gown is, however, so slight as to occasion very little inconvenience, while it must be acknowledged that a uniform costume adds much to the *esprit de corps*, which gives Oxford its peculiar character as a seat of learning, and perhaps assists in the preservation of more important rules.

The glory of Oxford is, that every thing about it is old, and long established, and respectable. Antiquity, in the phrase of Smith, would almost appear to have begun,

since this university attained the ripeness of maturity This is particularly apt to strike a Scotchman, all of whose antiquities, in respect of native literature, are comparatively modern. If he visits Merton's, he finds that Duns Scotus, whom he supposes to be his countryman, and who lived six hundred years ago, studied in those venerable halls He learns with a curious feeling that Antony Bek, the puissant Bishop of Durham, who aided Edward I. in his wars for the subjugation of Scotland, was once a quiet school-boy here. He goes to Baliol's, and finds that Devorgilla, Princess of Galloway (then a savage province), is still "remembered in prayer" every day in the chapel, for having fulfilled the designs of her husband for the foundation of this college; that husband being the father of John Baliol, King of Scots! In the hall, he sees a portrait of Wycliffe, the morning-star of the Reformation; for Wycliffe was "of Baliol's." As he treads the street in front, he is startled into awe by being told that on this spot Ridley and Latimer testified, amidst the flames of persecution, their adherence to the Protestant faith. In the cathedral—for Oxford is an episcopal see—he is shown the tomb of Frideswith, a Saxon female saint (contemporary with Edward the Confessor), who had a priory here before the erection of even the present very ancient building. A college, founded by William of Wykeham, in 1390, is termed *New* College, from its comparative want of antiquity, although Scotland had not a college at all for twenty years later. He enters the glorious hall of Christchurch, erected by Wolsey, and which is nearly as large as the Parliament House at Edinburgh, and he is surprised with accounts of plays and pageantries got up here for the entertainment of Elizabeth, of Parliaments held in it by Charles I. and Charles II., when expelled from London by the plagues of pestilence or republicanism, and many regal shows besides; for Christchurch is the college where the Sovereign always resides when visiting Oxford. In this splendid room he sees the lofty walls everywhere covered with the portraits of distinguished personages, who have been educated in Christchurch. Among them is the famous original portrait of Henry VIII., by Holbein, and also a picture of certain English divines of the time of the civil war, who are represented as reading the prayer-book in secret, because it was then a proscribed book. Strange, a Scotchman thinks, that religious associations should here be appealed to, by an object which, in Scotland, is looked back upon as connected with persecution, and the cause of many civil broils. What would Jenny Geddes think?

In this hall several hundred students dine every day; and it is mentioned with envy by the commoners of less magnificent establishments, that the *men* here are a luxurious set of fellows—they take their meat off pewter plates with hot water underneath. (By the way, there seems to be far more silver than crockery used at Oxford: the existence of Wedgewood and Spode is a thing not yet acknowledged in this antique world-within-itself.) The very kitchen of Christchurch is a sight: it has a fire that would roast not only an entire ox, but an entire crocadile. To dine in hall in any of the colleges is a treat of the highest kind to a Scottish visitant. He sits under the shades of the mighty who have sat here before him. He sees around the generous youths from whom the future dignitaries of the land are to be selected. He eats the bounteous food which Old England supplies to her learned sons. He drinks out of silver cups, which were, perhaps, gifted to the college centuries ago by grateful pupils, then advanced to greatness. And when he contrasts all this comfort with the starveling condition in which learning too generally appears in his own country, he feels somewhat like the simple husbandman in Hogg's Queen's Wake, who was transported one night, by the powers of his witch-wife, into the King of France's wine-cellar, and permitted there to swill at his ease. This recals to our memory an amusing anecdote of Dr Adam Smith, which we once lighted upon in a volume of the Gentleman's Magazine Smith was one of the young men sent by Glasgow College to be educated at Baliol's, upon *Snell's foundation*—an endowment originally intended for the rearing of a certain number of Episcopal ministers, in order to propagate that form of faith in Scotland, but which has latterly become a mere piece of patronage in the hands of our western university. When Smith first came into the hall to dine, the *scout*, or servant, who brought in the roast beef, was much struck by the bashful, and, perhaps, somewhat grotesque appearance of the young Scottish stranger, who seemed confounded at the grandeur of every thing he saw around him. "Well, Sawney," said the servant, as he placed the groaning representative of English good fare upon the table, "did you ever see any thing like that?" What the future author of the Wealth of Nations said in reply, or whether he replied at all, is not recorded.

The real elegance and beauty of many of the objects in Oxford is, in the highest degree, gratifying to a person of taste. The enormous cone of the Ratcliffe Library, so beautifully proportioned, notwithstanding its size; the fine spire of St Mary's Church; the admirable tower of St Magdalen's; and, perhaps, more than all, the sweetly shaded walks which every where surround the city; seize and captivate the imagination Among the ecclesiastical structures, the chapel of New College bears the first place for beauty. The choir is a hundred feet long, by thirty-five in breadth, and sixty-five in height; the antechapel, besides, is eighty feet long. Splendid windows of stained glass, a beautiful diced floor of black and white marble, seats and other furnishings of the most costly magnificence, mostly originating with Archbishop Laud, conspire to render this place of worship an object of the utmost interest. The writer of this article visited it during evening service. A train of robed ecclesiastics, with a few pupils of the college, entered, and took their seats in the desks arranged along the walls. Prayers were first chaunted, then some church music was sung by the choristers, who sat opposite. The organ, a remarkably fine instrument, lent its mellow notes to the general effect, which exceeded any thing of the kind he had ever known. The music, at the distance of more than a year, still haunts his mind in delicious snatches. After about an hour thus spent, the long train left the chapel in the same solemn wise: and concluded a scene which, we must confess, was as seductive to our Presbyterian mind, as ever the feminine vision was to St Augustine.

It is delightful to observe the keen feeling of appreciation with which every college holds up for its own glory the great names connected with it—how Queen's rejoices in Addison and Collins—Lincoln's in Wolsey—Christchurch in Peel, and a thousand great men before him—University in Eldon—Baliol's in Dr Adam Smith, and so forth. Each has its illustrious list, which constantly stands in the eyes of the present *alumni* as a motive for their exertions. Then every college has its own traditionary recollections. In the delightful "water-walk" of Magdalen's, you see a tree beneath which was Addison's favourite seat. You also recollect that it was the attempt of James II. to impose a Catholic head upon this college which helped so materially to forward the Revolution. You farther recollect the allusion of Pope to "Maudlin's learned grove." In reference to this college, and as a trait of the opulence of this learned scene in general, it may be mentioned that there is a deer-park connected with Magdalen's, in which, by the rules of the society, a certain number of those animals must always be kept.

Some of the customs of the university are exceedingly antique and curious, being kept up in accordance with very ancient rules, in which any flaw, however trivial, might perhaps endanger the whole foundation. For instance, on New Year's Day, the bursar presents a needle and a thread to every member of Queen's College, saying, "Take this and be thrifty." This is an old punning allusion to the name of the founder, Robert de Eglesfeld, who was confessor to Philippa, consort of Edward III.; Eglesfeld being interpreted into *aiguille et fil*. Nor is this all. Holingshed mentions in his history of England, that, when the Prince of Wales, afterwards Henry V., who was educated at this college, went to court, in order to clear himself from certain charges of disaffection, he wore a gown of blue satin, full of oilet holes, and at each hole a needle hanging by a silk thread. This is supposed to prove that the original academical habit of Queen's College was also fashioned in allusion to the name of the founder. While this and other customs are simple, and somewhat ridiculous, one kept up at Magdalen's is, in the highest degree, poetical. Previous to the Reformation, a mass was performed every May-day morning on the top of Magdalen Tower, for the soul of Henry VII., who had paid the college a visit in 1487. At the abolition of the Catholic worship, the mass was given up. But yet, early on every first of May, ten choristers ascend to the top of this tall and elegant tower, and there execute certain pieces of church music, for which they receive in remuneration ten pounds yearly out of the Rectory of Stainbridge, in Gloucestershire. The solemnity generally attracts thousands of visitors; and certainly it must be a sight of no common interest to see ten white-robed worshippers raising their voices far and high into the dewy calm of the May morn, as if they would rival the very lark, that at the same time pours its unpurchased music at heaven's own gates.

Another curious ceremony was once practised at Magdalen's. From a stone pulpit in a corner of the square was formerly preached an annual sermon to the members of the college, on the festival of St John; and in order that the scene might be rendered somewhat suitable, the whole place was fitted up with green boughs, to represent the *wilderness* in which that blessed apostle first announced the gospel. Some of our countrymen will be apt to declaim against these observances as rank popery; but they would be papists, or any thing, at Oxford.

As most of the young men at Oxford are the sons of parents in an exalted rank of life, their mode of living is appropriately a somewhat expensive one. It is a mistake, however, to suppose that any general system of prodigality prevails. Such of the youths as come here without the design of studying for a profession, lead perhaps a somewhat idle, and, it may often be, a dissolute life; but these would not be better in any other situation whatsoever. Most of the young men spend their mornings in close study in their own rooms, and only recreate themselves occasionally with a walk into the country, or a boating on the river. As no wine is permitted at the general table in the hall, they often retire in little parties to each other's rooms, and crack a bottle or two together. Music is a favourite amusement amongst them, as is testified by the great number of music shops in the town, and by the frequent strains which are heard issuing from the rooms in the evenings. It is pleasant, in passing under their open windows, to observe here a flute, and there a guitar, hung against the walls within. It conveys the idea of innocent recreation, and of an accomplishment which always sits gracefully on youth. As every man is obliged, upon a penalty, to be in his own college at nine in the evening, it is very difficult to carry any entertainment to excess at Oxford. The bell of Christchurch, called the Great Tom, is then rung; and though, as their old song says,

> "There's not a man
> Will leave his can,
> Till he hears the mighty Tom,"

yet they must sit no later, if they wish to preserve either their own comfort or their good character. The janitors, who are always respectable conscientious men, are rigorous in marking down any delinquency, and the aggregate of these at the end of the term, or season, always counts against a man in the eyes of his superiors, to whom he is to look for his honours. The Great Tom is a curiosity in his way. He formerly belonged to the neighbouring abbey of Ouseney, whence he was translated, at the Reformation, to the great tower of Christchurch. His rim was at that time inscribed with the following whimsical sentence:—

"In Thomæ laude, resono Bim Bom sine fraude."

In the praise of Thomas, I sound Bim Bom without fraud; the meaning of which is certainly far from clear. However, Tom was re-cast in 1680, and his present inscription simply implies that he is the Great Tom of Oxford.

In the square of Christchurch, by the way, is shown a statue of Bishop Fell, who presided over the College in the reign of Charles II. It was either upon him, or upon his predecessor, Dr Samuel Fell, that the well-known epigram was written—

> "I do not like thee, Doctor Fell,
> The reason why, I cannot tell.
> But this at least I know full well—
> I do not like thee, Doctor Fell."

This last Dr Fell, however, must have been a man of some sensibility, and, we should suppose, not so utterly unamiable as the jest would represent him. He was a great royalist, and on that account was expelled by the republicans in 1647. Two years afterwards, on hearing of the execution of Charles the First, he immediately expired! It is also worth mentioning, that the celebrated Burton, author of the Anatomy of Melancholy, and who, as we have heard, was descended from Scottish parents, lies buried in the cathedral connected with Christchurch College. We were much struck by his epitaph, which, if we recollect rightly, runs thus—

> "Hic jacet Thomas Burton,
> Cui vitam et mortem dedit melancholia."

Here lies Thomas Burton, to whom melancholy gave both life and death. Opposite to Christchurch, is the small and comparatively obscure institution called Pembroke College, in which Johnson received his education. His apartment is still pointed out.

Such, in fine, is Oxford—at least as Oxford appears to a native of our own country. The whole produces such impression of misty and entangling antiquity, that, after labouring under it for a day or two, it becomes a relief to see any object of expressly modern associations—such, for instance, as a Birmingham stage-coach. Reader, let us escape into the nineteenth century!

POPULAR INFORMATION ON SCIENCE.

HEAT—ITS PROPERTIES AND EFFECTS.

In resuming the duty we have undertaken, of explaining in a simple and popular manner the principles of science, we again come forward, like the guide to a stranger in a foreign country, desirous of leading our young friends through the most agreeable paths to knowledge. Still no scholastic difficulties will be found to perplex or impede our progress; for there is now no necessity to affect, like the priests of old, an air of mystery in explaining the very simple means which nature takes to accomplish many of her most important and beautiful operations. Already we have spoken generally of light, and surely there is no person of any intellect or feeling who can fail to be affected by the exquisite beauty of its nu-

merous and diversified phenomena; but another agent, as universally diffused, and as important, now claims our attention:—let us proceed to examine the properties and effects of heat, without whose benignant influence the earth would not pour forth its thousand streams, nor be clothed with verdure—nor the air be refreshed with genial moisture—nor the humblest of living beings be enabled to support its own bare existence.

When speaking of the nature of heat, we stated that most probably it consists of a peculiar and very subtle fluid, which interposes itself in greater or lesser quantities between the particles of all bodies—an opinion which seems sufficiently supported by the fact that heat may be readily transferred from one body to another, which certainly could not happen did it consist only of a certain vibration of the particles of the body itself giving rise to the sensation of heat. It is reasonable to consider—although, like light and the electric fluid, it cannot be weighed in our clumsy scales—that it is a substance distinct from the body which gives it forth, and it is called a fluid, because, like all fluids, it has a tendency to seek its own equilibrium; that is to say, to distribute itself equally in every direction.* If we suspend a red hot iron ball in an apartment, the heat from the iron escapes, dispersing itself equally through the cooler air, until the iron ball is reduced to the same temperature as the air by which it is on all sides surrounded. A fire burning in a grate communicates its heat equally in all directions, until every object in the room has arrived at the same temperature. By rarifying the air, and thereby producing motion in it, heat is very equably diffused through the air we breathe; and were it not for this tendency to equalize its distribution, it is obvious that it would accumulate in vast and irregular quantities, and we should be continually exposed to the most painful transitions, like the unhappy spirits described by Dante and by Milton, hurried incessantly from the sufferings of the most excessive heat to the equally intense agonies of the extremest cold:—

> Thither by harpy-footed furies hal'd
> From beds of raging fire, to starve in ice.

Heat, therefore, at all times seeks its own equilibrium; it also enters in greater or lesser quantities into the pores of all bodies; but some do not allow it to pass through them so readily as others. If we place the one end of a rod of iron in the fire, the heat from the fire passes so quickly through the whole length of the rod, that very shortly we cannot touch the other end without being burned; but we may hold the one end of a short stick, while the other is actually blazing, so slowly does the heat pass through the substance of the wood. Urns, coffee-pots, tea-pots, and other metallic vessels used for containing hot fluids, require ivory, bone, or wooden handles, which, on the same principle, being very slow conductors of heat, interrupt its communication to the hand. Those bodies which allow heat to traverse through them very quickly, are called good conductors—those that retard its progress, bad conductors of heat; and it has been found that the densest bodies are the best conductors. Silver, copper, gold, iron, allow heat to traverse them more readily than glass, wood, porous earths, and bodies of a looser texture. The hardest woods generally conduct heat best; and it is worthy of remark, that heat, seeking its equal distribution, rises from the earth, and is conducted along the longitudinal course of the woody fibres, rather than across them; so that the interior of a tree becomes of the same temperature as the soil whence it derives its nourishment. It is evident that bodies which are good conductors soon carry away the heat from those with which they are in contact; it is well, therefore, that porous earths are bad conductors, since, on this account, the soil on the surface of the globe retains, for a sufficient length of time, the temperature necessary for the evolution of seeds, and the growth of plants, shrubs, and trees. Fluids, owing to the mobility of their particles, receive and transmit heat better than solids; hence, when a hot body is plunged into water, it cools more quickly than it would do were it plunged into a mass of sand. Air is not a good conductor of heat, which is another admirable provision; for if it allowed its transmission as readily as the metals of which we have spoken, the heat from the surface of the earth would be so rapidly carried away, that no being, however humble in the scale of organization, would be able to support life. Count Rumford, indeed, discovered that air, in a state of absolute rest, does not conduct heat at all—a fact of very considerable importance. On a hot summer day, when there is scarcely a breath of wind stirring, the oppression we feel is in a great measure owing to this cause, for we are then moving in an atmosphere which does not conduct away the accumulating heat of the body. Furs, wools, feathers, and loose spongy substances, are, for the same reason, bad conductors of heat; for the air which is retained between their interstices, and which is at rest, prevents its transmission through them. Such materials we choose, therefore, for winter clothing, not because they contain or impart any heat, but simply because they prevent its escaping from the body, and protect us at the same time from the external cold air. Thus protected, many bold and enterprising navigators have braved the winter of the northern regions, and lived with impunity amidst the appalling coldness of those dreary solitudes, which seem to place an insurmountable and eternal barrier against the further extension of human dominion.

Nature, prodigal in her beneficence, has, on the principle we have endeavoured to explain, provided an appropriate and adequate covering for the animals of every region on the face of the globe. Those that live in hot countries have the hair of their coat fine, thin, and short, as may be observed in the graceful antelope, the camel, and in the stupendous elephant. Again, in those that frequent more temperate climates, the hair becomes thicker and woolly, as may be observed in the horse, dog, and sheep. Lastly, in the coldest countries in high latitudes the coat becomes shaggy, coarse, and thick, as may be observed by looking at the Lapland dog, the arctic bear, or fox Animals that live much in water—the beaver, otter, and other quadrupeds—are provided with the finest, longest, and thickest furs; and in all instances the fur is thicker on the parts of the body most exposed, more especially on the back, because the heat, escaping upwards, requires a greater obstruction in that direction. Birds frequenting the higher regions of the atmosphere require not only that their bodies should be light, but well protected from the cold, which, as we before explained, increases as we ascend into the higher regions of the air. Accordingly, we find that nature has not been unmindful of their exigencies; for in them the bones constituting the skeleton are hollow, and communicate with the lungs, so that they are continually filled with air, whereby the body is not only rendered light, but enveloped in a medium, which does not readily carry off their natural heat. But this is not all; for their plumage, so beautiful to the eye of the spectator, is also an admirable protection against cold; for the quill, the shaft, and the web of the feather, are so constructed as to offer the necessary obstruction to the escape of heat. The feathers, too, vary in kind and in quantity, according to the habits of the bird, the climate it inhabits, and the season of the year. We elsewhere observed that dark substances absorb and retain more heat than light ones; and this may be the reason why the birds of tropical climates are provided with such bright and dazzling plumage, which cannot but reflect the rays of heat, which otherwise might be absorbed. Many birds frequenting the colder countries have a feathery covering nearly as bulky as their whole body; but the contrary is observed in the birds of warmer climates. Birds that frequent the water are provided with an admirable defence against the cold to which they are subjected; for between the ordinary plumage we find a more delicate feathery structure, called down, which protects the breast against the coldness of the wave, which, in swimming, it divides. The swan, which is a favourite bird on account of the exceeding grace it exhibits on the waters, and indeed all water-fowl, exhibit this admirable provision. But there are animals destined to live in the northern seas, which are exposed to a much more intense degree of cold, yet which are neither protected by feathers nor by furs. These are provided, however, with an equally efficient protection, for, beneath the skin, disposed in small cells, vast quantities of fat or thick oil are imbedded, which completely envelopes the whole body. Such is found in the walrus, the seal, and the whale; and the oil that is thence procured is well known to be a very important article in commerce In all these instances such coverings operate simply as non-conductors of heat; preventing at the same time the escape of the natural warmth of the body, and the penetration into it of the external cold. Man, taught by observation and experience, has taken advantage, as we have already observed, of these facts to supply himself with winter-clothing, and, according to the experiments of Count Rumford, it appears that hare fur and eider down are the warmest materials for such apparel; after which beavers' fur, raw silk, sheeps' wool, and cotton wool, and after them lint, or the scrapings of fine linen.

Here we may pause to remark, that in pursuing any subject connected with science, it is desirable, nay, absolutely necessary, to understand and remember every principle explained; because, however trivial it may at first sight appear, on proceeding further it may be found to constitute a most important link in the great chain we have to unravel. We presume then, from what we have above stated, that it is understood that heat has at all times a tendency to distribute itself equally in all directions, and that some bodies allow it to pass through them more readily than others; which facts will now enable us to understand the cause of our sensations of heat and cold. When several bodies having the same temperature are placed in contact with each other, they each give out and receive the same quantities of heat, so that there is no increase of the temperature; but when bodies of different temperatures are placed in juxta-position, the hotter gives out heat to the colder, the exchange always being from the hotter to the colder body, until the same temperature is established between them. Accordingly, when the hand grasps a body colder than itself, it becomes sensible of cold, because a portion of its heat is conducted away by the colder body; but if it grasp a body that is hotter than itself, then the body of higher temperature communicates heat to the hand, which becomes sensible of warmth. In all these instances the intensity of the sensation depends on the superior or inferior conducting power of the body grasped, for the more rapidly the heat is carried away from the hand, the more intense is the sensation of cold thereby produced. The carpet in a room, of usual temperature, feels nearly as warm as the hand; the table feels rather colder; the marble chimney-piece still colder; and the fire irons coldest of all; but each of these will, on the application of a thermometer, be found of the same temperature, and the difference of the sensation, is produced only by the greater or lesser rapidity with which they severally conduct away the heat from the body. Our sensations of heat and cold, therefore, are merely relative; for even ice, when transported into a room, the temperature of which is below the freezing point, will radiate heat. Snow appears cold to a healthy finger; but it is applied to a frost-bitten limb because it is warmer than the limb so affected; and the object is to apply heat in the most gradual manner. Two persons bathing will, according to the heat of each, find an apparent difference in the temperature of the same stream. A person arriving from India into England, in the spring of the year, will complain of the coldness of the season, although the residents in that country are beginning, at that period, to cast away their winter apparel The danger which arises from going out of a heated ball-room, or theatre, is occasioned in this way by the transition of the warm body into a colder medium; by which, indeed, many lives are annually sacrificed, as it were, on the shrine of pleasure, and the seeds are sown, by which the fairest and loveliest of the land fall victims of lingering consumption.

So subtile and so universally diffused an agent is heat, that we at present have not discovered any kind of matter that is totally destitute of it, and its accumulation, or abstraction, in various bodies, must necessarily effect great changes in them. It is well known that the particles of all solid bodies are held together by a power of attraction which they exert among themselves, and which is called the attraction of cohesion, or aggregation; but no two particles of matter are ever in actual contact. Interstices of greater or lesser magnitude must exist between them; and it is into these that the matter of heat insinuates itself. It is evident, therefore, that heat must produce expansion; for by accumulating, it must distend these spaces, and force the particles bounding them to a greater distance from each other, whereby the whole body must necessarily be increased in bulk. But as this accumulation of heat causes an increase in the size, so must its abstraction, by diminishing the size of these interstices, and allowing the surrounding particles to approach nearer to each other, occasion the contraction of a body. An iron bar, when heated, cannot be made to enter an opening which, when cold, it will enter readily. Coach-makers avail themselves of this fact. In making carriage-wheels, they place the outer large iron rim round the wheel while red hot; then, as the iron rim cools, it contracts, and embraces more firmly the wooden frame-work of the wheel. The heat of summer alone is, even in this country, sufficient to occasion remarkable changes in the condition of metallic bodies; thus the centre arch of an iron bridge is higher in hot than in cold weather; the gate of an iron railing, which during cold weather will open and shut readily, will sometimes stick fast on a warm day, owing to there being a greater expansion of it and of the neighbouring railing than of the earth in which they are fixed. The pitch of a pianoforte or harp is lowered during a warm day; and although tuned in a morning drawing-room, will become out of tune when the crowded party has heated the room, owing to the expansion of the strings being greater than that of the wooden frame-work of the instrument. The pendulums of clocks, the balance-wheels of watches, and many delicate metallic instruments, are thus affected by the change of season, or removal to a warmer or colder climate, to compensate for which numerous very ingenious methods have been devised. Buildings of considerable size and strength are often very much injured by the expansion of the iron bars fixed in different parts of them, which only lately happened to Bow Church in London. In this church the bars of iron used to hold together the stones of its fine steeple expanded during summer, and forced the stones sufficiently apart to allow dust and sandy particles to lodge between them; nor is there any doubt but that, had it not been repaired soon enough, the whole edifice, in the course of time, might have fallen. A curious application of the known expansion of metals by heat occurred some time ago in Paris at the Abbey St Martin, now the Conservatoire des Arts et Metiers. The weight of the roof was forcing the walls of the building asunder, when they were restored in the following manner to their perpendicular position:—Holes were made at opposite points in several parts of the walls, through which iron bars were introduced, so as to extend across the building, and their extremities beyond the walls. Large nuts were then placed upon their ends, and screwed up so as to press upon the walls. Every alternate bar was then heated by powerful lamps, so that its length increased by expansion, and the nuts, before in contact with the walls, retired some distance from them. The nuts were then screwed up to the walls; and the iron bars, on cooling, contracted, and, from the pressure of the nuts, the walls were drawn together, so as to be restored to their proper position.

Accordingly, from what we have now stated, it must be obvious that the first effect of heat is the expansion of the body into which it enters; and when a still farther quantity is added, another change is produced, and the body, however dense it may be, is converted into a liquid. Silver, gold, iron, lead, tin, and all substances with which we are acquainted, excepting the diamond, which is a combustible body, and catches fire at a low temperature, may thus be liquified. The most remarkable circumstance attending liquifaction is this—when a body changes its state from a solid to a liquid, or from a liquid to a vapour, its expansion occasions a sudden increase of its capacity for heat, in consequence of which it absorbs an additional quantity, which becomes fixed, and so concealed as not to affect the thermometer. This is called *latent heat*. It is this addition of heat which occasions the body to pass from the solid to the fluid state: thus, when ice is converted into water, it absorbs as much heat as would, if it did not melt it, raise its temperature 140 degrees. On the other hand, before water can be converted into a solid state, it must, after being reduced to 32 degrees, part with this 140 degrees of heat, which occasioned it to exist in a fluid form. It is on this account that the processes of freezing and of thawing are slow operations; were it otherwise, the cold of a single night might suddenly freeze an ocean, and the heat of a single day suddenly convert the accumulated snows of winter into one sudden and frightful inundation. When water has been heated in an open vessel to the boiling point, instead of its temperature increasing, the additional heat escapes in the form of steam, and this steam absorbs 1000 degrees of heat, which immediately becomes insensible. It is for this reason that water projected on a raging fire so powerfully represses it, for the heat enters so rapidly into its latent state in the conversion of the water into steam, that it is soon abstracted from the burning body. We now, therefore, understand that, after expansion, the next effect of heat is to produce liquifaction; but if the heat be still continued, the material particles being forced to a still greater distance from each other, the liquid enters into a state of vapour Water affords a good example of this, being very readily vaporised; indeed it undergoes spontaneous evaporation at very low temperatures; but, on the application of cold, the watery vapour is soon condensed. When steam is first formed, it is invisible, as may be observed by noticing it issuing from the spout of a kettle; but when it comes into contact with the colder air it is immediately condensed,

* Philosophers call this matter *Caloric*, and restrict the use of the word *heat* to the *sensation* it produces; but in this place, instead of using the word caloric, we prefer speaking simply of heat, or of the matter of heat.

and assumes the appearance of a visible cloud. An immense quantity of water is continually evaporating from the surface of the earth. After a heavy fall of rain the fields and roads are inundated, but the water soon disappears during a little subsequent fine weather. The Mediterranean sea receives many large rivers; but the evaporation from its surface is so considerable as to prevent its increasing in size. The water thus evaporated from rivers, lakes, and seas, ascends into the air, and becomes condensed into clouds. It seldom happens in this country that the sky is perfectly transparent, but often, on a fine day, we may observe a cloud suddenly formed by a cold current of wind in the upper regions of the air, which rapidly condenses the watery vapour there into light fleecy clouds. Water, we may add, does not evaporate so quickly when still, as when agitated by a brisk wind; hence variable winds are generally regarded as the precursors of rain, and more rain falls during spring and autumn than during summer or winter.

When a body has absorbed a certain quantity of heat, it distributes it forth again; and in so doing, the heat passes off from its surface in rays or straight lines. When a solid substance is interposed, however, the rays of heat are intercepted, as happens when we use a hand-screen to protect the face from the heat of a common fire. Professor Leslie, of this University, has made a number of curious and interesting experiments on this subject; and he found that a rough and dark surface projects heat better than a smooth and polished surface, so that metals do not radiate heat so well as other substances. Since bright metals project heat most feebly, vessels intended to retain their heat, as tea and coffee-pots, should be made of such materials. Steam-pipes intended to convey heat to distant apartments should be on this account bright in their course, but dark when they reach their destination. Were it not for this radiation, the earth which has been absorbing the sun's rays for many days would become parched up by the accumulation of heat; instead of which, when the sun has set, it radiates it forth again into the circumambient air. The consequence of this is, that the surface whence this radiation takes place becomes colder than the surrounding atmosphere, and condenses the invisible vapour which the air always contains, into dew. Accordingly, dew is only deposited on those substances that are below the temperature of the air by which they are surrounded; and as filamentous substances radiate heat best, the dew appears in greater abundance where it is most wanted, on the grass of open plains rather than on bare earth, rocks, and masses of water. It is known that dew is deposited in the greatest quantity on a fine clear night, and that little is produced when the sky is overcast with clouds—the reason of which is, that the clouds, acting like a concave mirror, reflect back the radiated heat to the earth's surface, and so tend to keep it warm. Gardeners on this principle protect their tender plants, by covering them over with a mat or layer of straw, which protects them from cold, by preventing the heat being radiated away from them. Snow acts in the same manner; and by obstructing the radiation of its heat, keeps the earth below warm, while the air above is many degrees below the freezing point. Our own bodies radiate heat. When we go out into the open air at night, this radiation of heat induces a sensation of cold; and the coldness we experience is most intense when we are in an open country on a clear calm night. When it is cloudy, the heat is reflected back to us; and even in towns the reflection from the houses affords to us some compensation; but in the country, when the night is clear and calm, this radiation proceeds without interruption.

MYSIE AND THE MINISTER.

THAT eccentric genius, the late John M'Taggart, in his "Gallovidian Encyclopædia," says that Nathan M'Kie, the minister of Crossmichael, who died in the year 1781, was so much afraid of bogles, that he would not go out of a house at night, without some person going along with him, and holding him by the coat-tail, which assertion is strengthened by the following anecdote:—

Returning home from the manse of Kells on a hot summer day, he stepped off the road to rest his nag, and have a little chat with his old friend Snodgrass, who at that time rented the moorland farm of Tornorroch, at the junction of the Dee and the Ken. The farmer, and Nanny Nettle, his old maiden housekeeper, with nearly all the domestics, were busily employed in the kail-yard, striving to conduct a swarm of young bees into a new hive, by the rattling of old girdles, tongs, candlesticks, and such other articles about the steading as are usually put in requisition on such occasions.

Nothing could have been more agreeable to the minister of Crossmichael than to assist this rustic band in skepping the bees; and being well acquainted with all the rules since laid down by Bonar for the management of these insects, he soon succeeded in lodging the young community in their new habitation. Snodgrass was too good a landlord to allow his guest to depart without taking pot-luck, but it was unfortunately what is called in the country CAUL-KAIL-DAY, and the minister took only a few slices of a braxy ham; but what he wanted of *soddin* he made up in *sop*, of which few people ever left Tornorroch without a quantum sufficit

Snodgrass was such a noted hand at the bottle, that it was said he could drink even Craigdarroch, the champion of "the whistle," a well known Bacchanalian poem by Burns, blind, without being in the least tipsy himself—which made him more than a match for poor Nathan, who, when the sun was setting in the western horizon, supposed the reflection of that luminary in the "black water of Dee" to be an additional sun going down in the firmament. This the old maid, Nanny Nettle, took to be a sure indication that it was full time for the priest to be stepping homewards; and knowing how much he dreaded to be out under the cloud of night, and afraid lest on that account, if she allowed him to sit much longer, he might take the resolution of remaining for the night at Tornorroch, and, consequently, protracting his visit longer than she wished him to do, therefore took the liberty of reminding him how far he was from the manse of Crossmichael, and how soon the foxes would begin to howl in the neighbouring mountains. Another cheerer before mounting, and the stirrup cup, occupied so much time, that, ere he had passed the Boat-a-Rhone, the twinkling stars were overshaded by the dark clouds that rose in the west, and spread over the arch of heaven, and the demons of darkness began already to haunt his heated imagination. His fear was greatly increased by a tinkling which he fancied he sometimes heard at a distance, and at first supposed to be the wedder-bell of some neighbouring flock; but as the sound seemed to follow him on his journey, he became satisfied that his opinion in that respect was not correct; and, as if he had suddenly discovered the mistake, he said to his old gerran, as she cocked her ears, seemingly as much afraid as her master, "Ah! I have it now! the bees have left their new hive at Tornorroch, and crabbed Miss Nettle is tinkling her tongs to wile them back again! What a time of night this is to be following bees! I wish my friend Snodgrass and Lady Nettle have not been plying the bottle a little too freely since I left them." Then reining up his mare, he turned back as if to convince the old maid of the folly of her pursuit; but as he stood in breathless expectation of her approach, the tinkling sound died away in the evening breeze, filling the good man's mind at the same time with great consternation. But as soon as the mare recommenced her journey homewards, "What a fool I was," said he, "to think that the folk of Tornorroch were following me when the tingling is actually in another direction; it is undoubtedly the sound of the vesper bell coming from that Catholic house of Glendinning there at Parton." For a few minutes he continued to be of this opinion, but as his mare advanced, every step convinced him more fully that the sound proceeded from her feet, and he fancied it was occasioned by her shoes being loose: his mind was then a little relieved, for he was just at the smithy of Black Baldie of Cogarth, who, upon the minister's desiring him to do so, examined the shoes of the horse, and declared them to be all firm and fast.

"You are certainly in your cups to-night, Baldie, as I have too frequently found you to be before, otherwise you would not say so; the mare's shoes have clinked one after another every step from the Boat-a-Rhone, and you must therefore put a good stout nail into each of them."

"Aweel," said Baldie, "a body shou'd na stand in his own light, by refusing a job when he can get ane from sic a good customer," at the same time lifting his tool-box, and going through all the operations of horse-shoeing, without either drawing or driving a nail, so dexterously, that he of the manse was quite satisfied, and mounted again, praying that he might meet with no further interruption on the way. But at the first step the tingling commenced as loud as formerly, not far distant from where he supposed the sound to have proceeded before, but not quite so near the earth. He now believed that the whole was undoubtedly an illusion of the Great Enemy of Mankind to gain an ascendancy over him for some unseen purpose.

In great perturbation of mind he arrived at the manse, where the beadle of the parish was in attendance to receive him. "Lord save us, Sirs, but you are late to-night." "Ay, ye may weel say that, John," was the reply; "but you little ken how my patience has been tried, and how the arm of Omnipotence has supported me through the dark watches of the night, since I left the haunted How of the Airds, where ye ken the deil was once seen making spoons, and he has clinked at my heels all the way. But let us overcome the foul fiend by prayer." John was as superstitious as his master, and, hearing what he supposed to be an unearthly sound somewhere about the person of the priest, was equally terrified. To prayer they went, but all to no purpose, for as the minister staggered up stairs, the former ting-tang commenced, and sapient John stood motionless as a statue: but Mysie, the minister's maid, who was less afraid of bogles than either her master or his man, saw there was a "whaup in the rape" that would soon get out, meaning thereby a mystery that would soon be dispelled; nor was she kept long in suspence.

The sound that was heard below indicated that the reverend gentleman had only trampled once across his chamber, when a sudden rap was heard on the floor with a loud accompanying ting. "Ah!" cried John, "our master is triumphant at last; that is the sound of the foul fiend taking his departure; he is nae doubt in an unco fyke at being sae worsted." "If that be the case, I maun hae a parting glimpse of him," said Mysie, bounding up stairs; and, looking through the key-hole of the door of her master's chamber, she saw him lift a dark globular substance from the floor, which had seemingly fallen from a pocket in his coat, which he had cast off preparatory to going to bed, and had laid over the back of a chair, as was his usual custom; and as he held it in his hand, she heard him exclaim, "Gramercy! does what I so recently conceived to be a wedder-bell, the bees of Tornorroch, the vespers of Glendinning, the sound of my horse's shoes, and even the voice of Satan himself, turn out to be only this minikin table-bell, which I must have unconsciously pocketed in the kail-yard of my friend Snodgrass, after I had used it in skepping the bees. Had this mistake been discovered by my hairbrained maid Mysie, who is whiles fyking where she is no wanted, it might have proved unpleasant to me, as she would soon have made it ring over my whole parish, and then some ill-willy folk might have called John Barleycorn the father of it."

How the bell was returned to its proper owner, or if Mysie's account of it never met poor Nathan's ear, are particulars I have not been able to learn. But certain it is, that, from her recital, the lost bell of Tornorroch soon became a favourite fireside story in the Glenkens of Galloway.

DOLLS' EYES.

THOSE who are strangers to the extraordinary extent of manufactures in England, can have no idea of the amount of capital sunk, and industry exercised, on what might be termed the merest trifles. The following extract from the evidence given before a committee of the House of Commons, on the Report on Artizans and Machinery, and introduced with effect by Babbage into his late work on the Economy of Manufactures, illustrates this remark. The person examined was Mr Ostler, a manufacturer of glass beads, and other toys of the same substance, from Birmingham. Several of the articles made by him were placed upon the table for the inspection of the committee, which held its sittings in one of the committee-rooms.

"*Question.* Is there any thing else you have to state upon this subject?

"*Answer.* Gentlemen may consider the articles on the table as extremely insignificant; but perhaps I may surprise them a little, by mentioning the following fact. Eighteen years ago, on my first journey to London, a respectable-looking man, in the city, asked me if I could supply him with dolls' eyes; and I was foolish enough to feel half offended; I thought it derogatory to my new dignity as a manufacturer, to make dolls' eyes. He took me into a room quite as wide, and perhaps twice the length of this, and we had just room to walk between stacks, from the floor to the ceiling, of parts of dolls. He said, 'These are only the legs and arms; the trunks are below.' But I saw enough to convince me that he wanted a great many eyes; and, as the article appeared quite in my own line of business, I said I would take an order by way of experiment; and he showed me several specimens. I copied the order. He ordered various quantities, and of various sizes and qualities. On returning to the Tavistock hotel, I found that the order amounted to upwards of L.500. I went into the country, and endeavoured to make them. I had some of the most ingenious glass toy-makers in the kingdom in my service; but when I showed it to them, they shook their heads, and said they had often seen the article before, but could not make it. I engaged them by presents to use their best exertions; but after trying and wasting a great deal of time for three or four weeks, I was obliged to relinquish the attempt. Soon afterwards I engaged in another branch of business (chandelier furniture), and took no more notice of it. About eighteen months ago I resumed the trinket trade, and then determined to think of the dolls' eyes; and about eight months since, I accidentally met with a poor fellow who had impoverished himself by drinking, and who was dying in a consumption, in a state of great want. I showed him ten sovereigns, and he said he would instruct me in the process. He was in such a state that he could not bear the effluvia of his own lamp; but though I was very conversant with the manual part of the business, and it related to things I was daily in the habit of seeing, I fel I could do nothing from his description. (I mention this to show how difficult it is to convey, by description, the mode of working.) He took me into his garret, where the poor fellow had economized to such a degree, that he actually used the entrails and fat of poultry from Leadenhall market to save oil (the price of the article having been latterly so much reduced by competition at home.) In an instant, before I had seen him make three, I felt competent to make a gross; and the difference between his mode and that of my own workmen was so trifling, that I felt the utmost astonishment.

"*Question.* You can now make dolls' eyes?

"*Answer.* I can. As it was eighteen years ago that I received the order I have mentioned, and feeling doubtful of my own recollection, though very strong, and suspecting that it could [not] have been to the amount stated, I last night took the present very reduced price of that article (less than half now of what it was then), and calculating that every child in this country not using a doll till two years old, and throwing it aside at seven, and having a new one annually, I satisfied myself that the eyes alone would produce a circulation of a great many thousand pounds. I mention this merely to shew the importance of trifles; and to assign one reason, amongst many, for my conviction, that nothing but personal communication can enable our manufactures to be transplanted."

BIOGRAPHIC SKETCHES.

EDWARD DANIEL CLARKE.

(Concluded.)

THE stay of Clarke in Russia was of no long duration, and was rendered so disagreeable, first, by the savage tyranny of the Emperor, and, secondly, by the evil character of his subjects—which, as being every where felt, was infinitely more annoying—that our traveller regarded himself among a civilized people when he reached Constantinople. In fact, he found himself in a sort of English society; which, congregating together at the palace

of the embassy, engaged in the same round of amusements which would have occupied them in London. The time which these agreeable occupations left him was employed in searching for and examining Greek medals, and in viewing such curiosities as were to be found in Constantinople; among other things the interior of the seraglio, where no Frank, he says, had before set his foot.

Clarke next proceeded to Rhodes, the Gulf of Glaucus on the coast of Asia Minor, and thence by sea to Egypt, where the English fleet was then lying in Aboukir Bay. He did not, however, see much of Egypt on this occasion, for the country was still in possession of the French; and, therefore, after a short visit to Rosetta, he sailed for Cyprus; and, on returning from this voyage, proceeded to Palestine. Here he visited Jerusalem, Nazareth, Bethlehem, the Lake of Gennesareth, near which he enjoyed an opportunity of conversing with a party of Druzes, or Israelites of Mount Lebanon.

"His stay in Palestine was exceedingly short, just sufficient to enable him to say he had looked at it. He then returned to Aboukir Bay, where his brother was commander of an English ship, which now, on the 6th of August 1801, swarmed with French prisoners, like a beehive. When the road to Cairo was rendered practicable by the defeat of the French, our traveller proceeded to that city, where the most interesting objects existing were the beautiful young women, who had been torn by the French soldiers from the harems of the bey, and then, when they evacuated the country, deserted and abandoned to their fate. Here he procured a complete copy of the 'Arabian Nights,' which, with many other works that were so many sealed books to him, gave rise to much unavailing regret that he had bestowed little or no attention on the Arabic language. The pyramids, he of course, admired. 'Without hyperbole,' says he, 'they are immense mountains; and when clouds cast shadows over their white sides, they are seen passing as upon the summits of the Alps.' From the pinnacle of the loftiest he dated one of his letters to England, all of which are filled with lively dashing gossip, accompanied with rash, headlong, unphilosophical decisions, which the reflections of a moment, perhaps, might have served to dissipate. The news of the capitulation of Alexandria induced him to hurry back to the coast. He found the French troops still in the city, but preparing to embark with all speed. Great disputes, he says, had already arisen between General Hutchinson and Menou respecting the antiquities and collections of natural history which had been made by the French; the former claiming them as public, and the latter refusing them, as private property. The part performed by Clarke himself in this affair, he shall relate in his own words:—'When I arrived in the British camp, General Hutchinson informed me that he had already stipulated for the stone in question (the Rosetta marble), and asked me whether I thought the other literary treasures were sufficiently national to be included in his demands. You may be sure I urged all the arguments I could muster to justify the proceeding; and it is clear they are not private property. General Hutchinson sent me to Menou, and charged me to discover what national property of that kind was in the hands of the French. Hamilton, Lord Elgin's secretary, had gone the same morning about an hour before, with Colonel Turner of the Antiquarian Society, about the Hieroglyphic Table. I showed my pass at the gates, and was admitted. The streets and public places were filled with the French troops, in desperate bad humour. Our proposals were made known, and backed by a menace from the British general, that he would break the capitulation if the proposals were not acceded to. The whole corps of Savans and engineers beset Menou; and the poor old fellow, what with us and them, was completely hunted. We have been now at this work since Thursday the 11th, and I believe have succeeded. We found much more in their possession than was suspected or imagined. Pointers would not range better for game than we have done for statues, sarcophagi, maps, MSS., drawings, plans, charts, botany, stuffed birds, animals, dried fishes, &c. Savigny, who has been years in forming the beautiful collection of Natural History for the republic, is in despair. Therefore we represented to General Hutchinson, that it would be the best plan to send him to England also, as the most proper person to take care of the collection, and to publish its description, if necessary.'

No man, I suppose, who has passed beyond the frontiers of his own country, can fail to have experienced frequent depressions of spirit, during which he has probably repented him of his wandering habits. But Clarke was like a weathercock, now pointing to the east, now to the west. In the island of Zea, off the promontory of Sunium, he repented heartily of having undertaken the voyage to Greece. 'Danger, fatigue, disease, filth, treachery, thirst, hunger, storms, rocks, assassins—these,' he exclaims, 'are the realities' which a traveller in Greece meets with! Anon, at Athens, he writes, 'We have been here these three days; we sailed into the port of the Piræus after sunset on the 28th. The little voyage from Cape Sunium to Athens is one of the most interesting I ever made. The height of the mountains brings the most distant objects into the view, and you are surrounded by beauty and grandeur. The sailors and pilots still give to every thing its ancient name, with only a little difference in the pronunciation. They show you, as you sail along, Ægina and Salamis, Mount Hymettus and Athens, and Megara and the mountains of Corinth. The picture is the same as it was in the earliest ages of Greece. The Acropolis rises to view as if it were in its most perfect state; the temples and buildings seem entire; for the eye, in the Saronic Gulf, does not distinguish the injuries which the buildings have suffered; and nature, of course, is the same now as she was in the days of Themistocles. I cannot tell you what sensations I felt—the successions were so rapid, I knew not whether to laugh or to cry—sometimes I did both.

'Our happiness is complete, we have forgotten all our disasters, and I have half a mind to blot out all I have written in the first part of this letter. We are in the most comfortable house imaginable, with a good widow and her daughter. You do not know Lusieri. He was my friend in Italy many years ago. Think what a joy to find him here, presiding over the troop of artists, architects, sculptors, and excavators, that Lord Elgin has sent here to work for him. He is the most celebrated artist at present in the world. Pericles would have deified him. He attends us every where, and Pausanias himself would not have made a better cicerone.

'Athens exceeds all that ever has been written or painted from it. I know not how to give an idea of it; because having never seen any thing like it, I must become more familiar with so much majesty before I can describe it. I am no longer to lament the voyage I lost with Lord Berwick; because it is exactly that which a man should see *last* in his travels. It is even with joy I consider it is perhaps the end of all my admiration. We are lucky in the time of our being here. The popularity of the English name gives us access to many things which strangers before were prohibited from visiting, and the great excavations that are going on discover daily some hidden treasures. Rome is almost as insignificant in comparison with Athens as London with Rome; and one regrets the consciousness that no probable union of circumstances will ever again carry the effects of human labour to the degree of perfection they have attained here.'

Not one, after this, will accuse Clarke of being deficient in enthusiasm; but this is not all. On reaching the summit of Parnassus, he bursts forth into expressions of admiration, which, if they were not justified by the sublime beauty of the scenes themselves, or by the historical glory with which they must be eternally associated, would be absurd. 'It is necessary to forget all that has preceded—all the travels of my life—all I ever imagined—all I ever saw! Asia—Egypt—the Isles—Italy—the Alps—whatever you will! Greece surpasses all! Stupendous in its ruins! Awful in its mountains!—captivating in its vales—bewitching in its climate. Nothing ever equalled it—no pen can describe it—no pencil can portray it!

'I know not when we shall get to Constantinople. We are as yet only three days' distance from Athens; and here we sit on the top of Parnassus, in a little sty, full of smoke, after wandering for a fortnight in Attica, Bœotia, and Phocis. We have been in every spot celebrated in ancient story—in fields of slaughter, and in groves of song. I shall grow old in telling you the wonders of this country. Marathon, Thebes, Platæa, Leuctra, Thespia, Mount Helicon, the grove of the Muses, the cave of Trophonius, Cheronea, Orchomene, Delphi, the Castalian fountain, Parnassus; we have paid our vows in all! But what is most remarkable, in Greece there is hardly a spot which hath been particularly dignified, that is not also adorned by the most singular beauties of nature. Independently of its history, each particular object is interesting.'

From Athens they proceeded by land to Constantinople through ancient Thrace, by a route partly trodden by Pococke. After a short stay at this city, they directed their course homewards through Roumelia, Austria, Germany, and France, and arrived in England after an absence of upwards of three years. Cripps now returned for a short period to his family, and Clarke, who had by this time acquired an immense reputation, took up his residence at Cambridge, where, with very few intervals of absence, he remained nearly twenty years. He was very soon rejoined by his pupil, the completing of whose education, together with the arranging of his curiosities and antiquities, and the composition of his travels, fully occupied his leisure for some time. A statue of Ceres, which our traveller had dug up, and sent home from Greece, was presented, on his return, to the university; in consequence of which the degree of LL.D. was conferred upon Clarke, and that of M.A. upon his companion.

In 1805, Dr Clarke published a 'Dissertation on the Sarcophagus in the British Museum,' which, though necessarily neglected by the public, is said to have given considerable satisfaction to the learned, and procured for its author many valuable acquaintances. Another, and a very different subject, employed his mind throughout a great part of the following year. This was no less a thing than matrimony; which, as soon as the idea got footing in his brain, occupied his ardent imagination to the exclusion of every thing else. His suit, however, was successful. The lady of his choice became his wife; and to increase this piece of good fortune, two livings, for he had entered into orders, were presented him by his friends, the one shortly before, and the other immediately after his marriage. He now occupied himself with lectures on mineralogy, which were delivered at the university to crowded audiences, and were a source of considerable profit. This, as he expected, led to his appointment as professor of mineralogy; and 'thus,' says Mr Otter, 'were his most sanguine wishes crowned with success; and thus were his spirit and perseverance rewarded with one of the rarest and highest honours which the university could bestow.'

Dr Clarke now began to think of turning the treasures he had picked up in his travels to account; he sold his MSS. to the Bodleian Library at Oxford for L.1000, and his Greek coins to Mr Payne Knight for one hundred guineas. The publication of his travels next followed, and produced him a clear sum of L.6595. In the year 1814, his old passion for travelling revived, and an expedition was projected into the Grecian Archipelago, for the purpose of collecting antiquities, manuscripts, &c. But he was overruled by his friend, who probably believed that his constitution was now unequal to the fatigue which would be the inevitable attendant on such a mission. To this scheme he would appear to have been urged by the extravagant manner in which he had for some time lived; but a more practicable, or at least a more certain mode of recovering from the effects of this false step, presented itself, which was no other than reducing his expenses, and living within his income. This he had the courage to undertake and execute, and from that day forward seems to have led the life of a sensible man. His passion now took a new turn, and he was wholly absorbed by chemistry. In September 1816 he wrote as follows to a friend: 'I sacrificed the whole month of August to chemistry. Oh how I did work! It was delightful play to me, and I stuck to it day and night. At last, having blown off both my eyebrows and eye lashes, and nearly blown out both my eyes, I ended with a bang that shook all the houses round my lecture-room. The Cambridge paper has told you the result of all this alchemy, for I have actually decomposed the earths, and obtained them in a metallic form.'"

The constitution of this enthusiastic traveller and man of letters could not endure this continued, high-wrought mental excitement; and he died on the 9th of March 1822.—*Abridged from Lives of Celebrated Travellers.*

PRONUNCIATION.

The inhabitants of the Scottish border counties, particularly in Roxburghshire, have a peculiar way of using the letter *a*, which, as the English use it in *gall*, they generally pronounce as in *gale*. The following dialogue, which passed a few years ago, at the inn at Hawick, between a gentleman travelling for a mercantile house in London, and a female servant who had just conducted him to the traveller's room, will serve as an illustration:—

Traveller.—Send the waiter here.

Servant.—Yes, sir—(goes out, but returns almost immediately.) What kind o' waiter do you want, sir?

Traveller.—Kind of waiter! Why, how many kinds have you?

Servant.—Tway, sir—*waiter-waiter* and *wall-waiter*.

Traveller.—Waiter-waiter and wall-waiter! And pray what is the particular distinction?

Servant.—Distinction, sir? Ou, the yin is soft and guid for washin', and the other hard and pleasant for drinkin'.

Our traveller was at a stand-still; he was literally done up. At last he desired the female to send both before him, that he might judge for himself, which she accordingly did; but his surprise came to a climax when she presented him with two jugs which she said contained the *waiters* he desired. After no little trouble he discovered that the good people of Hawick pronounced the words *water* and waiter alike, and that the only difference between *waiter-waiter* and *wall-waiter* was, that the one was water from the river (or *water*), and the other water from the well (or wall.) As for "waiting waiters" they had "nane"—they were a' "waiting maids." The item for "*fash*" at the end of the traveller's bill was a tickler; but mine hostess contrived to explain it by saying, "it was answering the bell, clean'n' his shoen, and sick-like."

ANTIQUITY OF WHISKY.

There is pretty good evidence for supposing that no less a person than Osiris, the great God of Egypt, was the *first distiller of whisky* on record; for the Egyptians had, from time almost immemorial, a distillation or brewage from barley, called by the Greeks barley-wine, not inferior, they say in flavour, and superior in strength, to wine. Allusion is made to this liquor in several passages of ancient writers. The poor people of Egypt drank it instead of wine, and were wont to intoxicate themselves with it, just as our poorer people do with whisky. It seems also to have been no stranger to the Hebrews; for reference is certainly made to it in the Old Testament, under the name of "strong drink," stronger than wine, and resorted to by determined drinkers for the sake of inebriation. Among the Celtæ in Spain and France, it seems to have been common as a substitute for wine; Polybius speaks of a certain Celtic king o part of Iberia, or Spain, who affected great court pomp, and had in the middle of his hall golden and silver bowls full of this barley-wine, of which his guests and courtiers sipped or quaffed at their pleasure—a custom which, it is said, for many a century prevailed among his Celtic descendants, the reguli chiefs of our Scottish Highlands. The antiquity of this distillation is proved by the Egyptian tradition which ascribed its invention to Osiris. It may not improbably be supposed that the Egyptians communicated the invention to the Babylonians and Hebrews, who transmitted it northwards to the Thracians and Celtæ of Spain and Gaul, who, in their migrations north-westwards, carried it along with them into Ireland and our Scottish Highlands. This barley-wine was called by the Greeks [illegible]—(Qu. brew?)—which, in all likelihood, was its Egyptian or Celtic name. Aristotle entertained an extraordinary notion of this potation. Those intoxicated with it, he says, fall *on the back part of their heads*; whereas those drunk with wine fall *on their faces!* Julian, the emperor, wrote a Greek epigram on this Celtic beverage, which proves in what estimation it was held by the Greeks. We subjoin an attempted translation of it for the benefit of the distillers:—

Whence art thou, thou false Bacchus, fierce and hot?
By the true Bacchus! I do know thee not:
He smells of nectar; thy brain-burning smell
Is not of flowers of heaven, but weeds of hell.
The lack-vine Celts, impoverish'd, breech'd, and rude,
From prickly barley-spikes thy beverage brew'd;
Whence I should style thee—to appraise thee right—
Not the rich blood of Bacchus bounding bright,
But the thin ichor of old Ceres' veins,
Expressed by flames from hungry barley-grains,
Child born of Vulcan's fire to burn up human brains.

SIMPLE HABITS OF LIFE.

A manufacturer of Paisley, after a long life of severe toil, and little indulgence in the comforts of life, was suddenly enriched at last by the death of a relative in the West Indies, who bequeathed him the bulk of his fortune. The old man was soon afterwards at Edinburgh, where he happened to be introduced to the celebrated Lord Monboddo, to whom, at the same time, the story of his late acquisition

of fortune was related. "Then," said Monboddo, contemplating the spare figure of his new acquaintance, "you ought to live generously: you and your wife should begin to take a glass or two of wine, and otherwise improve your diet a little." "Ay, auld man," said the Paisley weaver, evidently thinking the advice completely anticipated by the alteration he had already effected in his system of domestic economy, "we tak parritch and *sweet milk* to our supper."

The elder Sir William Forbes, banker in Edinburgh, and a very polite man, was one afternoon leaving the bank, about four o'clock, with a plain country acquaintance, who had been doing business with him. "Good morning," said Sir William, in parting with this person. "Good mornin'!" cried the other in surprise; "I got my denner twa hours syne."

EPIGRAM.

Lieutenant Charles Gray, of his Majesty's marine corps, and author of a volume of poems chiefly in the Scottish language, was once obliged by the boatmen at Deal to pay an exorbitantly high fee for carrying him out to his vessel. Recollecting that this was the scene of Gay's well known marine ballad, he immediately penned the following epigram:—

When black-eyed Susan came on board—
If from the beach the Deal-men barged her—
I wish it had been on record,
How much those smuggling fellows charged her.

THE ATTENDANTS OF A HIGHLAND CHIEF.

The Gille-corse, or henchman, who closely attended the person of his chief, and stood behind him at table.

The Bladair, or spokesman.

The bard.

The Piobaire, or piper.

The Gille-piobaire, the piper's servant, who carried his instrument,

The Gille-more, who carried the chief's broad-sword.

The Gille-casfluich, who carried him, when on foot, over the rivers.

The Gille-comhstraitham, who led his horse in rough and dangerous paths.

The Gille-trusarais, or baggage-man.

The Gille-ruithe, or running footman, was also an occasional attendant.

Besides these, he was generally accompanied by several gentlemen, who were near relations; and a number of the commoners followed him, and partook of the cheer, which was always provided by the person to whom a visit was paid. These large followings, or *tails*, occasioned an act of council to be passed, prohibiting the northern lairds from appearing at Edinburgh with so formidable and inconvenient a retinue. The tails of the Highland chiefs were, however, sufficiently imposing on occasion of his majesty's late visit to Dunedin.—*Logan's Scottish Gael.*

MILES ATHERTON.

There are many beautiful little dwellings of industrious men scattered through the suburbs of Manchester; and none who have viewed with consideration their honey-suckled walls and the flowery gardens in which they stand, just out of the reach of the smoke and stir of the town, will doubt the good feeling and intelligence of the working classes. Manufactures have by no means that deteriorating influence on the character which some moralists would draw in such frightful colours. Industry at the loom may not be so poetical as industry at the plough, but surely it is not less intellectual. In manufacturing districts, where multitudes are gathered together, the vice that exists will force itself painfully on observation, while retired virtue often escapes notice; and in the din issuing at evening from the licensed haunts of the profligate, the passer-by is apt to forget the stillness of many a neighbouring fireside, where the operative is sitting happy with his wife and children, reading perhaps aloud, for their instruction and his own, or eking out, should wages be low, the week's means by an occasional by-hour of skill and ingenuity.

In one of those dwellings, for which, if beautiful be too strong an epithet, let us substitute neat and comfortable, Miles Atherton had lived for ten years, and in his own little world of labour, had enjoyed an equal contentment—the only human felicity. His wife was from Scotland, the daughter of a shepherd—brought, when just woman-grown, from her native pastoral braes into the midst of a new life. But, in the watchfulness of affection, she soon became familiarised with objects and occupations very different from every thing about her father's house, and in a few years the murmur of the sylvan Jed visited her ear only in some Sabbath dream. The working days were exclusively filled with delights and duties, joys and griefs, born and dying within the room where her husband and her children slept. Her parents had both died since she left Scotland; and though Mary Atherton and a few distant relations still mutually lived in each other's memory, yet in time and separation the living are almost like the dead, and, as they sometimes rise from oblivion, are but pleasant phantoms. But seldom as Mary Atherton, perhaps, now thought of Scotland, her simple and heartfelt voice spoke of her birth beyond the border, and now and then a wanderer from the "North Countrie," directed by neighbours to her house, repaid her charities by telling her that he had been in her native parish, had seen the spire of the kirk, and the plaided shepherds on the hill.

The evil of poverty is not in the suffering with which it wrings the heart, but in the poison which it too often mingles with the affections. Bread steeped in tears it is difficult to eat in thankfulness; and there is no blessing in the prayer in which there is no present hope. When earth stops its bounty, we despair of help from Heaven; and the piety which worshipped God by the warm hearth, faints over the dead embers. The change on our whole moral nature may be slow, but it is sure. Each successive day is darkened and disturbed to the sullen or angry heart; beloved objects lose their charm; and things formerly abhorrent to our nature possess a spell over us which, loathsome though it be, we cannot break, and under whose infatuation we hurry on to guilt, despair, and death. For three months Miles Atherton was poor—miserably poor; and in other three, just as winter came, with all its severities, he was also profligate—miserably profligate. His pretty children, a boy and a girl, were taken from school; their mother's face had undergone a change like that of many years' sickness; and their house, so long the pride of the suburban village, looked as if it were uninhabited.

Mary Atherton, before the neighbours, endeavoured to look cheerful, and an honest pride sometimes supported her when better feelings had worked themselves out; but that strength was of avail only in the open day-light. When the door was shut, she often sat for hours without moving, in a sort of blind resignation; for the little work she could get, or was able to do, could procure so small a portion of the very necessaries of life, that she took it up only in hurried snatches, and would lay it down again in despair, when her eyes met those of her pining and sickly children. Misery had made her husband hard-hearted—almost brutal; so that often at midnight she trembled to unlatch the door for him, and dared not, till he slept, approach his bosom. Yet the poor creature loved him as well—better than ever; and kisses and tears he knew not of fell on his haggard countenance, disturbed even in his dreams. The time for advice or reproaches was gone by, and her last hope was in meek silence and uncomplaining sorrow.

One morning the unhappy man took his boy by the hand, and little Alec allowed himself to be led away without ever once venturing to look into his father's face. Fear had not quelled love in that innocent heart, but it had sunk its expression in his downcast eyes; and now he walked along as if conscious of some crime, and about to receive punishment. His father stopped on a bridge over a canal, and placing the boy beside him on the ledge, looked on him in gloomy silence. It was a lonely place—the water brown and muddy—and little Alec began, he knew not why, to weep. His father, incensed at the wailing sound, and distracted by an evil conscience, struck him on the face, and in an instant the child was silent; for this was the first time he had thus felt the hand that used to stroke down so gently his hair over his forehead; and pain, fear, and wonder, checked sigh and speech. In a little while he heard his father groan, and then was lifted up on his bosom, and there forgot that cruelty as if it had never been. "Alec, my little Alec, would you be afraid to die?" "Yes, to be drowned, father; but not to die in my bed, with you and mother praying beside me, as you did when I had the fever in spring." A grim and hideous figure stood before them at these words, and, after some talking in a low voice, which the child feared to listen to, he felt himself alone in the grasp of a fiend, for his father had suddenly disappeared.

The winter came and went, and the mother knew not what had become of her sweet Alec, or if he were, as her husband said, yet alive in this miserable world. "Our boy is alive; but I could not support him, as you know, and he is apprenticed where he will do well enough, as the world goes, though he will have his hardships." How she herself was able to outlive all these months was a mystery—an upbraiding to her weary spirit; for, surely, she often thought, had not other wretchedness killed all love within her, she had long since been in the church-yard. All that the kindness of her poor neighbours could do was lost upon her, and she accepted their charity without gratitude. They wondered how she was kept alive; for no one ever saw her at a meal; and often, on the bitterest days, there was not a spark of fire in the house. Her daughter was frequently wiled away into other dwellings, and fed and warmed; but the mother kept her room, like a ghost, and was often seen, by persons looking through the window, leaning with her head on the Bible, which she was nowise able to read, for her eyesight had failed her, and she was almost as one of the blind. "Oh, Mary, leave your worthless husband, and become one of us," sometimes said her best friend—herself with a large family, and very, very poor; but the wife strove to straighten her crouching frame at these words, and said, in a hollow whisper, "Never, never, till he lay me in my grave."

It was the evening of a spring holiday; and for a brief space forgetting, or at least laying aside their sorrows, almost every family, in street and lane, had gone out for amusement. Low as wages were, and provisions dear, parents laid out something on their own dress and that of their children, that they might not seem worse off than they really were; and sights and sounds of merriment were rife through the suburb. Mary suffered her daughter to join the festivities—at least she made no answer to the richly-ribboned dame who came to invite her solitary child; and then fell back into that stupor which, to many eyes, often appeared to be a mid-day sleep. But the influence of this annual spring-holiday could not be wholly unfelt, far gone as she was in woe and want; and as the merry minstrelsy passed the door, she opened her eyes, and for one blessed moment thought she beheld little Alec, with some flowers wreathed round his hat, and dancing in his glee; but the vision and the music died away together, and she only uttered, "Perhaps it was his ghost!"

In an hour there was a knock at the door, which then slowly opened, and a soldier came in, seemingly off a long march. "Are you Mary Atherton?" said he, with a kind voice. "Yes; I am Mary Atherton: has my husband enlisted, and is he going away to a foreign country? Oh! or at he could be suffered to stay for a week or two, and then he would have no widow to forsake." "I have come, my good woman, to tell you good tidings of your lost boy; his name, he says, is Alec, and he is not far off." He was, indeed, near at hand; for almost, while the soldier was speaking, Alec was upon his mother's bosom—not in her arms—for they hung lifelessly—but in her bosom, and upon her neck; and, perhaps, his sobbings were not unheard in her swoon.

The mother recovered her senses, but not her speech; she held him now fast in her arms, as if about to bear him away from devouring fire; she loved more in that one dreadful clasp than she had ever loved in her whole life; and the thought of the great God was along with that of her first-born; so too was forgiveness of her husband—penitence for her impious sorrows, willingness now to die—and a desire—oh, how profound!—of yet a few days, months, years of this mortal life!

A few words from her boy told the tale of a whole winter's miseries. A father had sold his child into slavery! All those pretty curls were gone, whose golden lustre had once been the joy of a proud mother's heart; the roses had left his cheek; and his little hands were wasted to the very bone, and covered with scars and wounds; his voice was low and timid, as if terror had pitched its key; but still, in all that rueful change, it was the same cheek, the same forehead, the same hair, the same hands, the same voice, the same smile! "O bitter, bitter cold—dreadful, more dreadful heat—and cruel, cruel stifling of that sweet breath, hast thou, my blessed Alec, too long endured! Yet beautiful is my boy as ever; nor think that I could not have known my boy had I seen him all begrimed in his wretchedness—heard but his small pattering footsteps—had it been even in the uttermost parts of the earth!

The soldier who had rescued the poor sweep from slavery now rose to depart. The grateful mother began to request him to take some refreshment, and then her voice all at once ceased. After a pause she said—"You have brought riches into the house of poverty, for we have not at this blessed moment one morsel of bread!"

Mary was now left alone with her restored son, and that cold, dreary, desolate chamber was to her like one of the many mansions in the house of her heavenly father. With what divine happiness did she gaze on him kneeling once more by the bed-side, and saying distinctly his unforgotten prayer! Hardly could she believe that he had indeed been brought back to her from the dreadful darkness of some remote region, till she lay down and took him into her bosom. Wearied and worn with his long journey homewards, and all at once made perfectly happy after so many horrid months, the boy soon fell asleep, and his warm breath thrilled through his mother's heart, to the entire possession of all its affections, and utter oblivion of all its long distress.

When little Alice came home from the merriment, her smiles met with a joyful return, that startled the affectionate girl with a new kind of happiness. Awe-struck by the face of her long-lost brother, covered with the placid light of sleep, Alice muttered not a word, as her mother withdrew the curtain, saying, "Bless God for his return." In a few minutes she was laid by his side, and, without awaking him, placed her little arm softly across his neck, and, closing her eyes, soon beheld him in the pastime of her innocent dreams. No fire burned on the hearth—not even a rushlight twinkled—but the moonshine filled the chamber with a sweet, solemn, and sacred light, and all within was thankfulness, piety, and peace.

"Not yet gone to bed!" said Miles Atherton, with a harsh voice, as he entered the room in that reckless and violent manner habitual to the profligate. His wife was now above the power of fear—no beating at her heart—no trembling in her limbs; for the comforter had been with her, and there was such an expression of blessedness on her countenance, as the moonlight shewed it pale, wan, sunken, but rejoicing, that the wretched intruder was fixed in amazement, and calmed by the unexpected and inexplicable change of every feature. "Look here, my beloved husband, look here—look here!" and he beheld Alec and Alice fast asleep, and locked in each other's arms—"Yes, father, I love you—forgive you; will you let me kiss you, father?" murmured the boy, buried in a profound dream; and the sweet broken voice brought the sinner on his knees, as if God's own hand had smitten him with sudden death.

Hours passed away; and the grey light of dawn saw husband and wife yet kneeling as in morning prayer. Mercy and forgiveness are the attributes of the Eternal; and, like an effluence from his Spirit, may be breathed from one human heart to another, destroying both grief and guilt. Remorse had long preyed upon its victim, but now he was delivered up to penitence. Evil found now no abiding-place in his spirit; and, after many sudden visits—many ghost-like hauntings and midnight knockings at its gate, forsook it for ever—leaving but a salutary and monitory dread of its return. In a few months the summer flowers were again bright in the garden, and clustering round the porch; and before the summer was gone, as the family, in decent apparel, walked duly every Sabbath to church, the neighbours had almost entirely forgotten how grievously one had erred, and all had been afflicted. But it was on the Sabbath-day that the penitential man most remembered all his sins; and, in its blessed freedom from wordly cares, he then communed with his own heart, and knew that it had been desperately wicked. His son's face was a perpetual memento of his guilt, but one that he loved to look on; and the beauty of returning health on that other face which, in its most deadly wanness, never had upbraided him, reminded him, almost every time it smiled, of the long-continued cruelty that had nearly brought it to the dust. But contrition settled down within his heart; for he felt as if he had finally made his peace with God, and that the past ought to be remembered only for sake of the future.—*Janus.*

ARCHITECTURE OF THE HUMAN BODY.

I have just had put into my hands an instructive and pleasingly written tract, in a pocket size, entitled "a Lecture illustrative of the Archi-

tecture of the Human Body, intended for the Rising Generation, by Henry William Dewhurst, Esq. professor of Zoology, London." What delights me most with this humble production is the pious and benevolent feeling in which it seems to be composed; the author invariably tracing the wonderful mechanism of our corporeal frame to the *forethought* and *design* of an Omnipotent Creator. There is such a simplicity in the language, also, that it can be read with edification by even the most unlearned. I am sure my young readers will not be disinclined to peruse the following extract.

"Man is placed by an all-wise Providence at the head of the whole animal creation, who are made subservient to the gratification of his wants and necessities. In him we perceive a great chain of characters by which the Almighty has been pleased to distinguish him from the inferior classes of animals by whom he is daily more or less surrounded, and to whom he resembles in many points by their structure and functions. The most evident feature is that man alone is intended to walk in the erect posture, an action no other creature is capable of performing, whilst the structure of the most perfectly formed monkey prevents the animal sustaining the upright position for any length of time without a great effort, or clinging to some external support.

The higher characteristics of man constitute his peculiarities. He possesses intelligence; and the prominent features of his mental powers are his *animal propensities*, by which he is placed on a par with the lower animals; thus enabling him to propagate and rear his offspring, and provide for their necessities;—his *moral sentiments*, which govern his animal passions, and give him a sense of good and evil;—lastly, his *intellectual faculties*, which stamp his importance and superiority, as composing the summit of the animal kingdom.

Let us philosophically examine the manner in which he is constructed, and we shall find that it is in perfect accordance with the most exact mechanical principles: investigating the heart and the blood vessels, through which the vital fluid circulates, it is proved to be a perfect hydraulic machine, the heart being a most powerful engine by which the blood is propelled to the extremest part of the body; the lungs constitute an inimitable pneumatic apparatus; the beautiful membranes and transparent humours of the eye, forming an admirable optical instrument; in the same manner are the ears constructed on the most accurate principles of acoustics.

What an animated being! how vigorous and powerful! what beautiful and complicated machinery forms the graceful column of man! It being composed of bones, articulations or joints, arteries, and veins, clothed with muscles and integuments! how duly balanced! how aptly contrived for his various movements! At the summit of this column the head appears, appointed to this high situation as containing the seat of sensation, the light of understanding, and the faculty of sight. In the cranium, or skull, is situated the brain, the *organ* of the immaterial principle. In the brain the mind takes up its residence: here she holds communication with all the material things around her; from the brain she issues her commands, through the agency of the nerves, and sensations are conveyed from all parts of the body to the brain. The brain being extremely tender and susceptible of injury, the slightest local compression disturbing its action, it was necessary that it should be well protected from external violence.

The skull will frequently bear the most surprising degree of mechanical force applied to it without suffering any injury. It is composed of eight bones united by dove-tailed lines or sutures; if it had consisted only of one bone, it could not have answered every purpose for the defence of the brain. The division of the cranium into so many bones enables it to grow much faster, and with greater facility. In the early fœtal state, as the first and second month after we are created, that which afterwards becomes the strong bony case of the brain exists only as a tough flexible membrane.

Ossification, or the deposition of bony matter, commences in the middle of each bone long before birth; the brain soon appears as if it was covered by so many scales or shells held together by the membrane not yet ossified. In order to facilitate the birth of the child those scales overlap each other, so as most usefully to diminish the size of the skull. If the cranium had only consisted of one bone, this provident design of nature could not have taken place. The dove-tailed joints by which the bones of the skull are connected, are evidently of great utility in preserving the extension of fractures of the bones of the head; owing to the *sutures* which prevent the extension of the fracture, we generally find the effects of the injury confined to the bone on which the blow was received.

In no other part of animals do we see a greater instance of mechanical advantage, or lever power, than in the *lower jaw*. The temporal and masseter muscles pull almost *directly* at right angles to the line of the jaw; while in most other cases, as in that of the deltoid muscle lifting the arm, the muscles act *obliquely*, and with intensity diminished in proportion to their obliquity: an object placed between the back teeth is compressed with the whole direct power of the strong muscles of the jaw. Hence the human jaw can crush a body that resists with great force. The *teeth* form an extraordinary set of chisels and wedges for cutting and tearing food. They are covered with a hard substance called enamel; on this account the teeth of many of the larger animals were used in former times for the same purposes as we now use steel, from the quantity of earth it contains. A set of small teeth appear soon after birth, and serve the child until the sixth or seventh year; these, in the course of time, fall out, and are replaced by larger ones, which last during a considerable period of our life. The number of teeth is only completed when the man and woman are full grown, by four more, called wisdom teeth.

In order to facilitate the various movements of the head backward and forward, and in the act of nodding, looking upward and downward—to effect these extensive purposes, it moves as an articulated fulcrum or prop, on which it can turn either backward or forward, up or down, horizontally to the right or to the left. The two first movements are effected by a hinge-joint fitted to the *atlas*, or first bone of the neck, but limited by ligaments, in its movements backward and forward, to prevent suffocation. The horizontal motion is effected by a peculiar auxiliary, placed on the bone below the first vertebra. It is a process of bone resembling a tooth, which fits into a pivot of the bone above it, and serves as an axle for the head to turn, but only to a limited extent, the muscles on each side protecting it from danger.

The spine, or back bones, are a continuation of the vertebræ: various uses and amazing powers can never be wholly investigated; yet the reflective man can perceive sufficient of the magnificent design to compel him to adore and venerate the superior excellence of his God.

The spine, in figure, resembles, in some degree, an Italic *s*, and consists of twenty-four vertebræ, or bones, joined together by smooth-rubbing surfaces, and connected to each other by very strong intervening cartilages, more correctly termed intervertebral substance, which is extremely pliable, allowing great motion to the bones, and preventing their separation from one another, which would be followed by a material injury to the spinal marrow, and consequently to the destruction of life. The spine is the centre pillar on the top of which the head is situated; its use is to contain a prolongation of the brain, called the *spinal marrow*, which is of the greatest importance to animal life: if it is injured in the slightest degree, immediate death, or a paralysis of the parts below the injured portion, are the consequences. Consequently, in unison with all the works of the Creator, we find the spine uniting with great strength great elasticity and flexibility. The spine is susceptible of the greatest variety of motion; if it had only consisted of one bone, no motion could have taken place, and the spinal marrow would have been rendered more liable to injury. Those horrible distortions of the spine so often seen in highly civilized circles, are the effects of a disease of the intervertebral substance between the bones of the spine, created by that disgraceful system of tight-lacing the stays by fashionable females.

From the spinal marrow, the nerves supplying some of the principal organs in the chest, abdomen, and inferior extremities, receive their origin. The spine affords support to all the muscles of the trunk; the ribs are articulated into the vertebræ of the back.

There are twenty-four bones in the human spine, joined to each other by broad bases; in some parts these bases are shallower than in others, according as they are to serve more immediately either the purposes of flexibility or strength. In the back, where strength is most wanted, they are firmer than in the loins, where flexibility is necessary; and still firmer in the neck, where the erect posture is chiefly required. Each of these bones is perforated through the middle, and so placed over and under those next to it, as to form a close canal for the medullary substance. To prevent this passage from being disturbed on change of posture, by the vertebræ shifting over one another, these bones are supplied with cartilages, which, being of an elastic and yielding nature, allow of these motions without separation of the bones themselves.

I may mention a curious fact, but yet a truism, that we are taller in the morning when we rise from our bed, than when we retire to it, for this reason, the weight of the body compresses the cartilages between the bones of the spine, which are restored partly by their elasticity, and partly from the superincumbent weight being removed during the horizontal position we assume when at rest.

On the various joints of the bones much of their different effects depend. Each is mechanical, and resolvable by human reason. There are two principal sorts of joints; *viz. ball and socket*, and the *hinge-joint*; one or the other is used according to the extent of motion required. At the knee (the most complicated in structure) a hinge answers the purpose of moving the leg backwards and forwards: at the hip, a ball and socket serve to co-operate with the motion of the leg, and to move the limb to the right or left in any required position. The shoulder-joint is a ball and socket; but the socket here is very shallow, with a cartilage round its margin, while the cup of the thigh bone is very concave, and formed of more solid materials. These differences agree with the situations of each of them, and the purposes they are separately to answer; for as the one is a principal instrument of motion, the shallowness of the socket, and the flexibility of the cartilage, form its motion; while in the thigh and leg, which are to support the body, firmness is likewise necessary, which has been conceived in the conformation of the joints connected with them. In all the joints of the body, the ends of the bones are covered with cartilage, to prevent injury by the friction of hard substances. The ball, or head of the thigh bone, is tipped, and the cup lined, with this yielding substance: and the hip joint is protected by it. Each joint is supplied with a fluid denominated by anatomists *synovia*, by butchers, *joint oil*, which prevents the dreadful effects of friction.

Having considered the joints on which animal motions depend, we may next contemplate the mechanism by which these motions are generated and supported. The muscles and their tendons are not only constitutionally endowed to generate and regulate motion, but also differently constructed for these purposes, according to the movement required and the instruments used. For example, at the knee and elbow, where the joint is large, which serves only to move the limb in the same plane, the tendons are placed parallel to them, and lengthen or shorten in that direction; but in the hip and shoulder where the ball and socket joint is found, the muscles are variously placed, and are capable of contracting and restoring themselves in each position. The muscles also, by their different directions, support the bones, particularly the head; and all the limbs are regulated in their movements chiefly by their agency. Each muscle has what is called an antagonist muscle; *viz.* one that acts in a direction contrary to the other; for the muscles cannot expand beyond their natural size, though they cannot contract; therefore, to produce a contrary motion, another muscle must be called into action: it is by this contrary motion of the muscles of the face, that the features are duly balanced in their places. The natural strength of the muscles may be either increased or diminished by exercise; for we perceive the legs of a dancing-master, the arms of a pugilist, watermen, or anchor-smith, are stronger by use. All the limbs of the body are levers of the third class; for the resistance must be farther from the prop than the power, the power being in the joint itself.

Muscles in general are pairs (with one or two exceptions we find them single, as the circular muscle of the mouth, &c.); their number has been estimated at two hundred and eighty-nine; but as they are the same on both sides, this must be doubled, which makes five hundred and seventy-eight, an enumeration which is pretty nearly correct. All animal motion is effected by muscles. They are divided into two great classes, *viz.* the *voluntary* and *involuntary*; those under the influence of the *will*, as the muscles of the arm and leg, &c.; and those whose action is independent of the will, as the *heart*, &c., which is merely a hollow muscle for the purpose of receiving the blood, and propelling it by means of arteries to all parts of the body. Each muscle has an antagonist muscle; *viz.* one that acts in a direction contrary to the other: one muscle throws the arm out, which is called the extensor; the other bends the arm, and is called the flexor: one muscle relaxes, while the other contracts. Nothing is satisfactorily known about muscular contraction: this physiological question is not decided. The muscles are supplied with nervous energy by means of white cords, called nerves, which arise from the brain and spinal marrow: we know nothing of the nature of this principle circulating in nerves; we can only witness its effects. That nervous energy is necessary to the healthy performance of the various functions of the body, there can be no doubt. Digestion, secretion, sight, hearing, smelling, tasting, &c. cannot be effected if the nerve of communication between their respective functions and the brain be divided.

The body is supported by the blood, which is circulated by means of tubes denominated arteries and veins; the former carrying it from, and the latter returning it to, the heart, which organ gives a motion to the arteries, synchronous with the heart itself, and extending to the extremest ramification in the body; this motion we denominate the pulse. Thus is man a complete piece of machinery, the whole of which is put into action by means of a power derived from the brain through the agency of its nerves. The vital fluid passes from the heart into the lungs in a state dangerous to the preservation of life, being loaded with carbon, which it gives off in these organs; on receiving a due proportion of oxygen from the atmosphere, the blood becomes purified and fit for the support of animal life. It circulates from the heart of a bright scarlet colour, and returns again to this organ of a reddish black, united with a great quantity of carbon, which it has obtained in the course of its circulation, after it has performed the trifold offices of *secretion*, *nutrition*, and *vivification* or the *preservation of life*; while the digestive organs perform their due offices, create the various secretions, and form new blood in lieu of that which is expended.

The blood in an adult human body has been estimated to circulate throughout the whole system in four hours, or about six times in the course of a single day. Its quantity has been estimated by Bartholine to be about twenty-four pounds, and Sir Charles Bell considers thirty-three pounds as the average proportion, but in my opinion its exact quantity can never be truly ascertained.

By means of the beautiful mechanism of the heart and lungs is the important function of the circulation of the blood accomplished; and there is no portion of physiological research which displays greater perfection of design, a more admirable and splendid contrivance, or more ingenious machinery, than is exhibited in the formation of the heart and its vessels. The exquisite construction of even the most minute organ, and the harmonious sympathy pervading the whole, are objects of wonder, and must ever excite the veneration and admiration of all who delight to search after and contemplate the more elaborate works and unerring operations of the great Author of Nature.

I have already stated that an animal body is supported by means of blood, which is carried from the heart by means of tubes called arteries, and circulated by these through all parts of the body, and conveyed back again to the heart by veins. The nutritious portions of the various kinds of food we daily swallow are converted into blood. After masticating our food, it mixes with the saliva of the mouth, and is conveyed in a pulpy state to the stomach; it is there acted upon by a juice secreted by glands within the coats of the stomach, called *gastric* juice, which converts the food into *chyle*; it then passes from the stomach in this state into the large intestine, called the *duodenum*, where the nutritive part becomes separated from the feculent, and is converted into *chyme*, a substance resembling milk, which enters into a large vessel, called the *thoracic duct*, and passes upwards to its termination in a large vein near the neck, where it is converted into blood. This blood is not adapted for the nourishment of the body without passing through the lungs, where it is acted upon by the oxygen of the atmosphere, and becomes oxygenated, converted into *arterial blood*, in which state it nourishes the human body.

The organs of *sense* are the instruments by which we enjoy intercourse with the external world, and first—

The organ of *vision*. In man, and the higher orders of animals, they are two in number, situated in cavities formed by certain bones of the cranium and face. They are furnished with muscles which move it in every direction, and surrounded by a very soft delicate species of fat, which protects them and yields to them in all of their movements. The eye is composed of a series of tunics, some of which are transparent, containing diaphanous humours, through which the rays of light are transmitted to the retina, and enables us to perceive objects around us. There are appendages, as the eyebrow, &c. whose offices are to preserve the eye from injury.

2. The organ of *hearing*, a most beautiful but complicated piece of mechanism, is divided into the external and internal ear, by the musculus tympani, or drum of the ear. The former is on the outside and well known, the latter is contained within the petrous process, or internal portion of the bone. The limits of this lecture, however, will not permit me to give even a concentrated description of this organ.

3. The organ of *smelling*. The seat of this sense is in the cavity of the nose, in which a delicate vascular membrane is distributed throughout its extent, and upon which the olfactory nerves are ramified in great numbers. Its office is the detection of fragrant and unpleasant odours, and to secrete a mucus for its defence.

4. The organ of *taste*. It would be waste of words to describe the form and situation of the tongue. Besides constituting the organ of taste, it presents a most interesting subject to the physiologist and pathologist, from the concern it has in the functions of mastication, deglutition, and articulation. Its bulk is composed of numerous muscles. It is covered by the continuation of the membrane of the mouth. At the tip, edges, and upper surface of this organ, there are numerous projecting processes, called papillæ, and in these the sense of taste resides.

5. The organ or sense of *touch*. The whole external surface of the body is covered with a strong elastic integument, called the skin. Anatomists divide this into two layers, of which the internal is termed the true skin, while the external is called the scarf skin; a third layer can only be demonstrated in negroes, in which the colour is said to reside: this layer is called the *rete mucosum*: it also exists in Europeans, but is difficult to demonstrate. The use of the skin is to afford protection and support to the organs beneath it, and to exercise a function necessary for our comfort, *viz.* the exhalation of a gas, the exudation of the perspirable matter.

Now let us turn to man in his latter years, when he is about to shake off this mortal coil of infirmities and disease. When old age approaches, the arterial system acts more weakly, the irritability is less, the functions are more weak, the glands diminish in bulk, the fat is absorbed, and the fluids become more acrid. The arteries can no longer conquer the accumulated load in the veins, the brain is overloaded, and serum exhales in the abdomen and under the skin; the glandular vessels cannot propel their fluids, the nerves no longer possess their irritability, and the senses decay. From these causes the limbs grow stiff—the arteries ossify, or are partially converted into bone—the whole system is oppressed with a load it cannot overcome. The eyes become dim, and the vital functions refuse to perform their office, nature fails, and we expire."

HUMAN STRENGTH.

As an appropriate accompaniment to the foregoing article

we are tempted to present the following anecdotes of the power of the human frame, which we derive from a delightful volume, just published in the *Family Library*, by our countryman Sir David Brewster, entitled, "Letters on Natural Magic." The feats which immediately follow relate to Thomas Topham, who exhibited about a century ago, being 31 years of age, and 5 feet 10 inches high:—

1. Having rubbed his fingers with coal-ashes to keep them from slipping, he rolled up a very strong and large pewter plate. 2. Having laid seven or eight short and strong pieces of tobacco pipe on the first and third finger, he broke them by the force of his middle finger. 3. He broke the bowl of a strong tobacco pipe placed between his first and third finger, by pressing his fingers together sideways. 4. Having thrust such another bowl under his garter, his legs being bent, he broke it to pieces by the tendons of his hams, without altering the bending of his leg. 5. He lifted with his teeth, and held in a horizontal position for a considerable time, a table six feet long, with half a hundred weight hanging at the end of it. The feet of the table rested against his knees. 6. Holding in his right hand an iron kitchen-poker, three feet long and three inches round, he struck upon his bare left arm, between the elbow and the wrist, till he bent the poker nearly to a right angle. 7. Taking a similar poker, and holding the ends of it in his hands, and the middle against the back of his neck, he brought both ends of it together before him, and he then pulled it almost straight again. This last feat was the most difficult, because the muscles which separate the arms horizontally from each other are not so strong as those which bring them together. 8. He broke a rope about two inches in circumference, which was partly wound about a cylinder four inches in diameter, having fastened the other end of it to straps that went over his shoulder. 9. Dr Desaguliers saw him lift a rolling-stone of about 800 lbs. weight, with his hands only, standing in a frame above it, and taking hold of a frame fastened to it. Hence Dr Desaguliers gives the following relative view of the strengths of individuals:

Strength of the weakest men . .	125 lbs.
Strength of very strong men . .	400
Strength of Topham	800

The weight of Topham was about 200.

One of the most remarkable and inexplicable experiments relative to the strength of the human frame, is that in which a heavy man is raised with the greatest facility, when he is lifted up the instant that his own lungs and those of the persons who raise him are inflated with air. This experiment was, I believe, first shown in England a few years ago by Major H., who saw it performed in a large party at Venice, under the direction of an officer of the American navy. As Major H. performed it more than once in my presence, I shall describe as nearly as possible the method which he prescribed. The heaviest person in the party lies down upon two chairs, his legs being supported by the one and his back by the other. Four persons, one at each leg, and one at each shoulder, then try to raise him, and they find his dead weight to be very great, from the difficulty they experience in supporting him. When he is replaced in the chair, each of the four persons takes hold of the body as before, and the person to be lifted gives two signals by clapping his hands. At the first signal he himself and the four lifters begin to draw a long and full breath; and when the inhalation is completed, or the lungs filled, the second signal is given for raising the person from the chair. To his own surprise and that of his bearers, he rises with the greatest facility, as if he were no heavier than a feather. On several occasions I have observed, that when one of the bearers performs his part ill, by making the inhalation out of time, the part of the body which he tries to raise is left as it were behind. At Venice the experiment was performed in a much more imposing manner. The heaviest man in the party was raised and sustained upon the points of the fore-fingers of six persons. Major H. declared that the experiment would not succeed if the person lifted were placed upon a board, and the strength of the individual applied to the board. He conceived it necessary that the bearers should communicate directly with the body to be raised. I have not had an opportunity of making any experiments relative to these curious facts; but whether the general effect is an illusion, or the result of known or of new principles, the subject merits a careful investigation.

HISTORICAL CONTRAST.

Among the prejudices which we should like to see swept away by the advance of enlightened feeling, is that *other kind of self-love* which consists in an intense appreciation of our own nation, to the exclusion of almost all respect for our brethren in the great family of mankind. It is time that the Briton were made aware of the existence of military prowess, learned accomplishment, and other good qualities, in countries beyond his own seas; and it would also be worth while to inform him of what some enlightened foreigners have said respecting us; by which, in learning that he and his fellow-countrymen are beheld occasionally with the same prejudiced feelings which he entertains regarding them, he would be induced to cast those ideas away from him, as quite unworthy and unjust; and, at the same time, perhaps, he might have his own real faults so strongly placed before his eyes, that he must needs be conscience-struck by them. A work containing the remarks of the most *enlightened* foreigners upon our country would be one of much use, and of very great interest.

We are not going to present any parallel between the British nation and its neighbours—although we may perhaps do so at another time. The two following passages from a very pleasing work, contain a contrast between the manners of Christian Europeans and Mohammedan Asiatics, in the eleventh and twelfth centuries. Remote as the period is, the reader will blush to think that there should have been so much more humanity under the crescent than the cross. The extracts are from the "History of the Knights of Malta," written for Constable's Miscellany by the late amiable Mr Alexander Sutherland, of Edinburgh, a person of much literary merit, who died at the early age of thirty-seven, carrying with him the regrets of all who had had an opportunity of knowing the extent of his talents, and, what was even more conspicuous in him, his extraordinary worth in private life.

THE CONQUEST OF JERUSALEM BY THE CRUSADERS.

On the 7th of June 1099, the Christian army encamped before the city. Battle, desertion, and disease, had frightfully thinned its ranks; and of the seven hundred thousand fighting men who had marshalled in the plains of Bithynia, there remained, exclusive of the garrisons left in the conquered cities, scarcely twenty-two thousand fit for the field. The pious zeal of the crusaders, however, had survived all the vicissitudes of their long and toilsome march. When they beheld the hallowed city from afar, the van-guard uttered a shout, which, rolling backward on the line of march, was echoed by the whole host. The more devout manifested their rapture by kneeling down in the dust, and shedding tears of joy, and many bared their feet on approaching the sacred walls. The Counts of Flanders and Normandy pitched their tents to the northward of the city, near the church erected on the spot where Stephen the proto-martyr died. Godfrey and Tancred erected their standards on the first swell of Mount Calvary—and Raymond of Toulouse occupied a position to the south of Mount Sion. On the fifth day of the siege, the crusaders made a furious attack; and, amid a storm of arrows and fire balls, burst the first barrier, and strove to surmount the walls by escalade. The want of engines to batter them down, and ladders to scale them, rendered the assault abortive; and the crosses were driven back with shame and slaughter to their camp. This defeat was followed by a grievous scarcity of provisions and water; and the excessive privations which this deficiency occasioned, overwhelmed the whole army with suffering and anguish. So extreme was the thirst of the soldiers, who vainly sought for water in the stony ravines that seamed the country, that they dug holes in the ground, and pressed the damp clods to their lips to moisten them. On the 15th of July, the army again advanced to the assault. Through the exertions of Godfrey and Raymond, some Genoese mariners from Jaffa constructed two huge movable towers of timber, brought from Sichem, a place thirty miles distant, and rolled them with immense labour to the foot of the fortifications. Drawbridges were made to extend from the top of these turrets to the battlement; and when the sun rose on the beleagured city, they were seen crowded with chosen warriors, eager to grapple hand to hand with the Moslem foe. Raymond's tower was burned to ashes by the fire which the besieged hurled against it; but the Count Bouillon's fully answered the purpose for which it had been constructed. Armed as an archer, Godfrey posted himself on its summit, and for a considerable time his bowmen alone maintained the battle. "But at the hour," says the Chronicler, "when the Saviour of the world gave up the ghost, a warrior named Letolde, who fought in Godfrey's tower, leaped the first upon the ramparts. He was followed by Guicher—the Guicher who had vanquished a lion; Godfrey was the third, and all the other knights rushed on after their chief. Throwing aside their bows and arrows, they now drew their swords; at sight of which the enemy abandoned the walls, and ran down into the city, whither the soldiers of Christ with loud shouts pursued them." At three in the afternoon, the standard of the Cross waved in triumph on the walls; and, after four hundred and sixty years of bondage, the Holy City passed from under the Mohammedan yoke.

The victory thus bravely won was tarnished by the ferocity of the conquerors. All who showed the smallest disposition to resist were hewn down; and, for three whole days, promiscuous massacre and pillage prevailed. Ten thousand miserable beings, who had been promised quarter, were barbarously put to the sword; and infants even were butchered in the cradle, and at their mother's breast. In the court of the Mosque of Omar, a structure built on the site of the famous temple of Solomon, to which thousands of fugitives fled as a sanctuary, the Latin knights rode fetlock deep in Saracen gore. The whole city swam with blood; and the victors, sated at last with slaughter, looked themselves with horror on the desolation which their own inhuman fury had made.

When the work of death was over, the chief crusaders, in accordance with the devout zeal which animated them, laid aside their arms, washed their bloody hands, and, barefooted and uncovered, repaired in solemn procession to the Redeemer's tomb. The fierce warriors who had so recently abandoned themselves to the most revolting atrocities, were seen kissing with pious fervour the memorials of the sufferings of Him who had been the messenger of peace to man; and the Holy Sepulchre resounded with their triumphant anthems and repentant groans. In the height of their enthusiasm, they fell at Peter the Hermit's feet, praising God as glorified in his servant.

THE RE-CONQUEST OF JERUSALEM BY SALADIN.

The last days of the kingdom of Jerusalem now seemed to be fast approaching. The king and the flower of his nobles were in captivity—the manhood of the country had fallen under the swords of the Infidels—and the military orders were nearly extinct. It was under these disastrous circumstances that the few Hospitallers, still marshalled under their once victorious banner, assembled, to elect a leader in the stead of the venerable knight who had received his death-wound in the battle of Tiberias. That dignity was no longer an object of competition, but so beset with cares and perils, that the knights with difficulty prevailed on Ermengard Daps, on whom their choice fell, to accept it, which he did, under the conviction that it remained only for himself and his brethren to seek an honourable death (1187.) Saladin lost no time in following up his victory by new conquests. Many of the strongest places in the kingdom, drained of their garrisons, and filled with dismay at the rapidity with which he overran the country, threw open their gates, and, at length, anxious to smite the Christian power to the core, he laid siege to Jerusalem, which was defended only by a few thousand Christians, the chief of whom were followers of the Greek church, and of course hostile to the Latin supremacy. The queen, who awaited within the walls the ruin of her throne, offered to capitulate; but Saladin, knowing her inability to offer a protracted resistance, rejected the proposition, and declared, that, if the city did not instantly surrender, he would scale the ramparts, sword in hand, and avenge, by an indiscriminate massacre of the inhabitants, the Moslem blood shed by Godfrey of Bouillon. This answer rendered the Latins desperate, and they resolved to bury themselves under the ruins of their shattered battlements. Even the women, gathering courage from despair, took arms, and prepared themselves to share the death that awaited their natural protectors; and so bravely did the garrison repel every assault, that, at the end of fourteen days, the sultan was glad to sign the treaty which he had previously rejected. The terms were at once honourable to the garrison, and indicative of a rare humanity in the conqueror. The city was left undespoiled, and the Christian nobles and soldiers were permitted to march out with their arms, and guaranteed a safe convoy to any town in which they might choose to seek refuge. As to the inhabitants, the native Greeks were allowed to remain unmolested; but such as were Latins by descent, were required to pay a ransom; the men ten, the women five, and the children two crowns of gold, and to remove to some other place. All persons who were unable to pay this ransom were detained as slaves.

Notwithstanding the clement terms of this treaty, the last article of which alone pressed with severity on the vanquished, religious associations gave it an aspect of refined cruelty to the unhappy Latins, who passed the last night they remained possessors of the city in lamentations and tears. Multitudes, carried away by a pious enthusiasm, which momentarily became stronger as the hour of their expulsion drew near, hastened to the Holy Sepulchre, and prostrated themselves in mournful humiliation before it. Saladin, with a consideration that did him honour, refrained from entering the city, though the gates were thrown open at sunrise, until these melancholy demonstrations were ended, and the last of the Latin Christians had bidden it a final farewell. The matrons carrying their infants, led the procession;—after them came the men, bearing provisions for their journey, and such household relics as circumstances permitted them to remove;—and, lastly, came the queen, and the two infant princesses, her daughters, surrounded by the priesthood, the remnant of the nobility, and the few military men who were still able to grasp a lance. It is said that several of the Christian ladies, whose lords were in captivity, uttered dolorous cries, and lifted up their hands in earnest supplication, when they beheld Saladin, as he stood watching their departure. The noble-minded Kurd, on being made acquainted with the cause of their grief, which one of them, who had prostrated herself at his feet, energetically described as to be lightened only by the liberation of their natural protectors, humanely ordered such prisoners as they named to be set free, and dismissed the fair suppliants with several princely gifts. Nor did the generosity of the conqueror terminate with this chivalrous action. With that respect for valour and humanity which supremely distinguished him, he no sooner heard of the benevolent attention which the Hospitallers were in the habit of bestowing on the sick and wounded, than he granted ten of them permission to remain a year longer in Jerusalem to perfect the cure of all the sufferers who had been confided to their care.

Thus, on the 2d of October 1187, at the distance of eighty-eight years from its conquest by the first crusaders, Jerusalem passed once more under the Mohammedan yoke. Saladin, ere he entered the subjugated capital, caused the bells of the Christians temples to be broken and melted down; and the Patriarchal Church, which had originally been a magnificent mosque, built by the Caliph Omar, on the ruins of the famous Temple of Solomon, was carefully purified with rose-water, and again dedicated to Infidel rites. The great cross which surmounted the dome of this superb structure was also displaced by the sultan's orders, and, as a mark of degradation, dragged for two successive days through the filth of the streets. The wars of near a century had won for the city that had been the object of so much pious zeal and so many sanguinary conflicts, nothing save fresh dishonour and a heavier chain.

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